THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

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DEFECTS AND QUALITIES.

THERE is no surer way of perceiving the spirit of the age, whether in architecture, art, or literature, than by noticing the qualities it admires and the complementary defects which it is willing to overlook. When Gothic is the fashionable mode of building its virtues will be exaggerated and its faults condoned, and it is probable that Æschylus' phrase of "one shape with many names" will be only too apt, and railway-station and museum, church and law court will appear as if intended for one common purpose. So, too, when the Pre-Raphaelite spirit was abroad, it made no difference to Millais that the scene visible from the Ark must have been dimmed with vapours rising from the subsiding water; rather, as Mr. Gorse has said of Holman Hunt, he "placed perfectly pure pigments side by side without any nonsense about *chiaroscuro*," or any attention to the defects of the undoubtedly good qualities introduced into English art by the school to which he belonged. To-day, possibly in consequence of the faults of a Pre-Raphaelite generation, it would seem that a spirit of rebellion against outline is abroad—that outline which to Blake as to the young Millais was "the great and golden rule of art" by which great artists knew one another, and Futurism and Cubism have exceeded Post-Impressionism in their abandonment of form in favour of another ideal.

To this generation the virtues of Gothic as a living school are in abeyance; we perceive its inconveniences, its defects for modern buildings, and even question its entire suitability for the religious purposes of the present day. In return for our abandonment of the Gothic ideal we have gained fresh appreciation of the merits of the Renaissance, especially for civic purposes, and its defects are, therefore, passed by or condoned; but, though we admit its value for all public purposes, in private we set before ourselves a different ideal. It is the age of cottage worship in domestic architecture, and the "cottage of gentility," scoffed at by Coleridge, the low and spreading cottage of the twenties of last century, has given place to a reproduction, more or less exact, of the farmhouses and village greens of Kate Greenaway and Randolph Caldecott. The demand for such houses, whether so-called "country cottages" with fifteen bedrooms, like one recently advertised in a morning paper, or what the writer has seen described as a "Bijou Edwardian Maisonnette"—*i.e.*, ill-built villas, with three bedrooms and a shaky verandah, of the type often satirised in *Punch*.

The public eye has, in fact, become so accustomed to gables and sham timber that for one plain square house erected in a growing district there will be found two hundred distinguished by roofs wasteful of space inside and costly to build, by gables added wherever it is possible to insert them, by low casement windows which look suitable, no doubt, but which leave all rooms unventilated at the top and admit rain far too freely to admit of open air on stormy days. The qualities of the style are so popular that its defects are overlooked, but when the reaction comes, as come it will, the defects will outweigh the qualities and the reign of the square house be marked with the usual contempt for the taste of the preceding period.

And it is fortunate that it is so. To be too clear-sighted is fatal to everyday happiness, to that appreciation of one's surroundings that makes for serenity of mind.

What, we may ask, is the underlying cause of such changes of ideals, such variation in perceptions? In the first place, the defects of the age immediately preceding our own are clearer to our minds than those of others more remote; their qualities, therefore, make less appeal to our imagination and our sympathy. By a natural, if illogical, inference we suppose that some earlier time lacked the defects we see in our immediate predecessors, that their ways were more in harmony with our own, their thoughts, or at least their sympathies, with ours. Our own inclination, still more our own imagination, will lead each one of us to select the period with which he finds himself most readily in sympathy, or will select from different periods phases of art or architecture, literature or religious experiences to suit his own ideal. Thus a man may be anti-Gothic when it comes to modern cathedrals without losing his appreciation of Rheims or Chartres; he may admire the Tudor farmhouse or the seventeenth-century cottage without seeing in either the qualities which should go to the large house of to-day. Yet it seems to be a law of human nature that certain defects, *videlicet*, those of the preceding age, shall always bulk larger in his mind than its good qualities, and for this fate every wise man will in his turn be prepared. And that preparation is best achieved by having a varying standard for various subjects, by judging, as far as may be, every case on its own merits, and thus gaining, or trying to gain, an appreciation of the qualities rather than the defects of every subject which shall prevent the formation of that barrier to all mental and spiritual progress—the cast-iron standard, which will have none of all that it finds strange, and recognises in the present age, whatever it may be, a universal degeneration instead of acknowledging that no period, like no man, is altogether bad.

THE ROME SCHOLARSHIP DESIGNS.

THE designs submitted for this blue ribbon of students' competitions have been on exhibition at Crosby Hall. In noticing the architectural designs last year we commented on the difficulty which students were in of having a very complicated subject set them involving acquaintance with the uses and requirements of a large mass of accommodation which was not scheduled in detail. We pointed out then that students who had tackled this difficulty and really tried to think out details of planning had been handicapped by doing so.

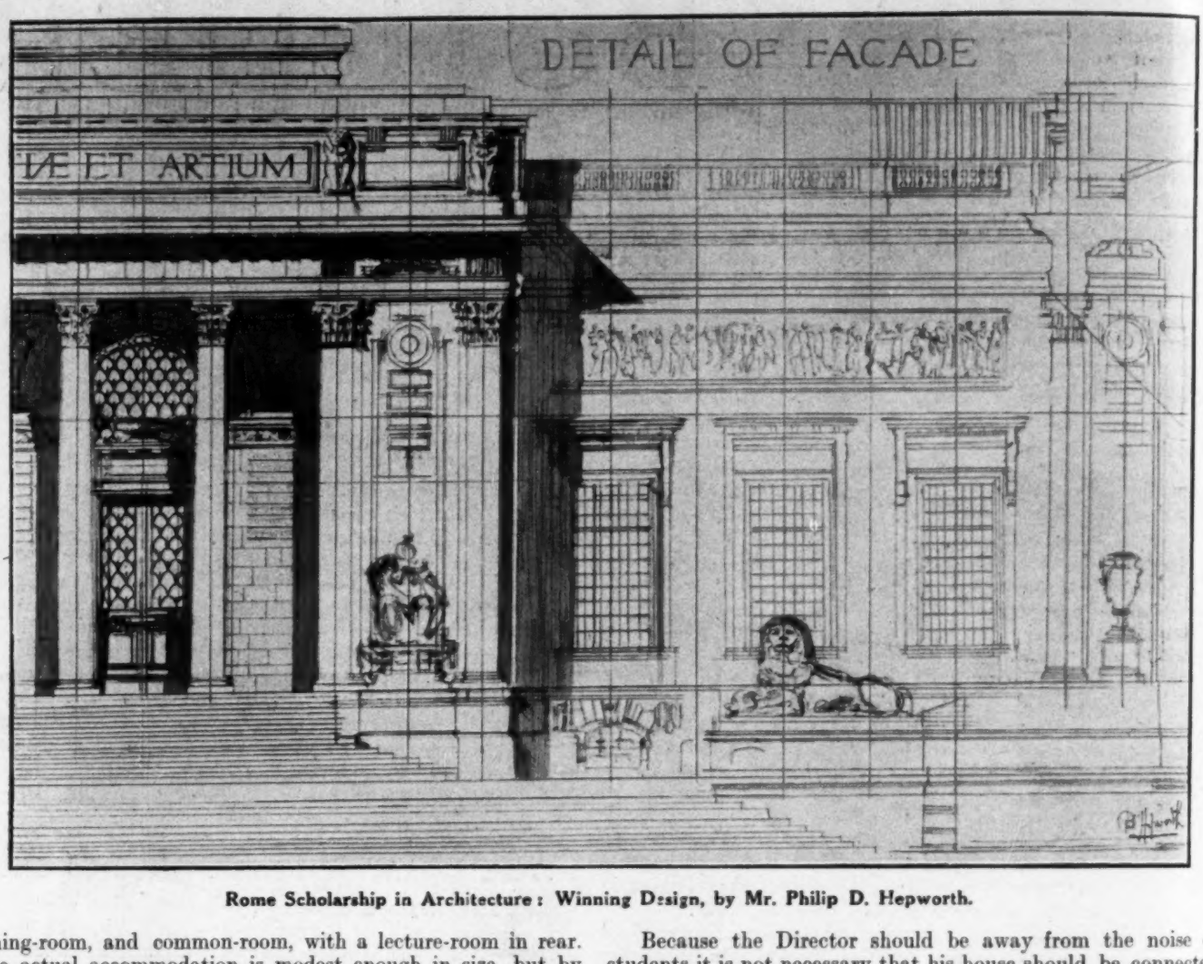
The dilemma is this. Students of twenty to thirty years of age cannot be expected to have much practical acquaintance with the accommodation required in public buildings, and, as architecture is an art which before all others has a practical side, no design which imperfectly fulfils common-sense requirements can be held to be a good architectural scheme, however architecturally it is expressed.

The result is rather to force the average student to produce something in the nature of an architectural monument with little or no relation to the purposes to which it is to be put. We suggested that in the case of a large building it would be as well to give students sketch plans showing how the practical and utilitarian accommodation laid down could be met, and leaving it to each student to express the accommodation in architectural terms.

In the present case the problem set—"A British School in Rome"—would appear to be something which should not be beyond the power of a student to think out in terms of plan, yet the exhibition of designs shows us that this is not so, since the three most notable designs submitted are from a practical point of view absurd and out of court; while the remainder, which are more modest in their scale, are architecturally very deficient. We suppose the requirements laid down could be met for a sum of £25,000 to £30,000 at the outside; while the schemes submitted by Mr. Philip Hepworth, Mr. Cormier, and Mr. Braddock might be for buildings costing three times the amount we have suggested.

Architecturally there is nothing to prevent a more modest scheme being presented. Many of the buildings of the Italian Renaissance occur to us as being perfect essays in design on a reasonable scale, and afford convincing proof that for purposes of design we need not necessarily be afflicted with megalomania.

The winning design, by Mr. Philip Hepworth, which we illustrate, consists of a central building containing the library,



Rome Scholarship in Architecture: Winning Design, by Mr. Philip D. Hepworth.

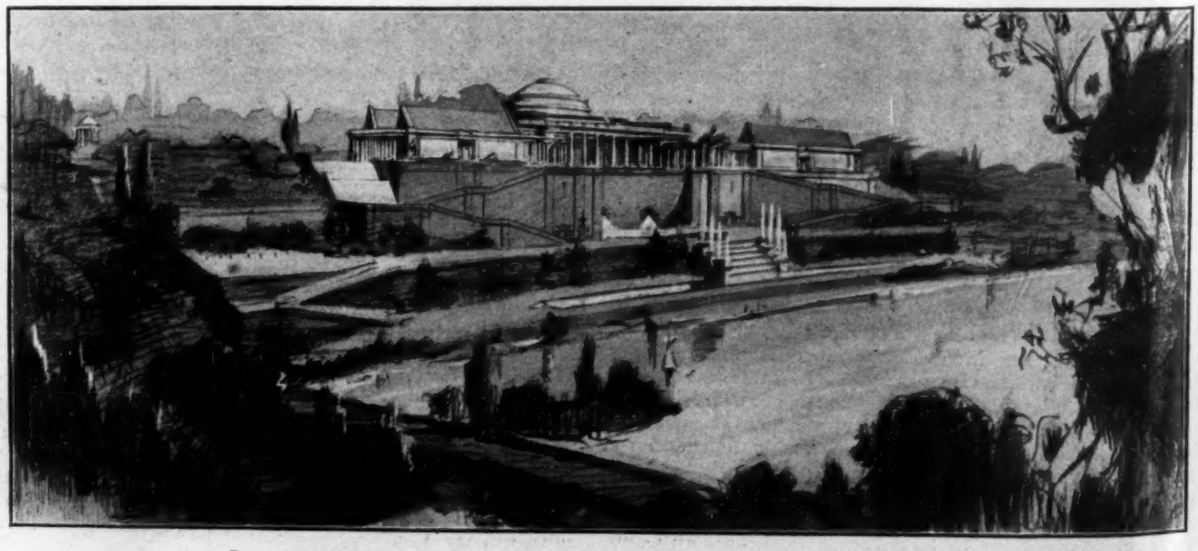
dining-room, and common-room, with a lecture-room in rear. The actual accommodation is modest enough in size, but by the time a huge Corinthian façade, halls, galleries, etc., have been added the block becomes of imposing size and mass, and reminds us of Falstaff's "one half-pennyworth of bread to this intolerable deal of sack!" The studios for painting and sculpture are placed in rear and, like hospital blocks, connected with the main buildings by corridors and columned ways; while a block for pensioners and the Director's house are similarly placed in front, the connecting colonnades forming the sides of a "Cour d'Honneur." All this affords opportunity for the display of architectural design and detail, but we do not think it is quite "within the meaning of the Act." It reminds us of the planning of Vanbrugh at Blenheim—planning which justified the view that he was a scene-painter first and an architect afterwards; but of Blenheim it may be said that it is a monument first to commemorate a British Victory and secondly to form a country house.

Because the Director should be away from the noise of students it is not necessary that his house should be connected with the main building by a long colonnaded way.

Architecturally the scheme is very pleasingly detailed, without any eccentricity or tricks of design, broadly and well handled, and shown by a magnificent set of drawings. The author's work shows much promise, and marks an advance on any of the work submitted for last year's prize.

Mr. Cormier, whose design we illustrate, obtains the Jarvis Studentship with a scheme which is more compact and reasonable in plan than Mr. Hepworth's, but the plan is, notwithstanding, out of scale with the wants it provides for. The architectural treatment is not as good as that of the design last described, and the terraced face of the ravine is restless and ineffective.

The design by Mr. T. Braddock, illustrated on pp. 63, 64, and 65, is, in our view, better in conception than either of the two first designs. Like them, it is spoiled by the immense scale



Rome Scholarship in Architecture: Winning Design, by Mr. Philip D. Hepworth.

and emphasis given to small requirements, but we consider it a far more telling architectural group.

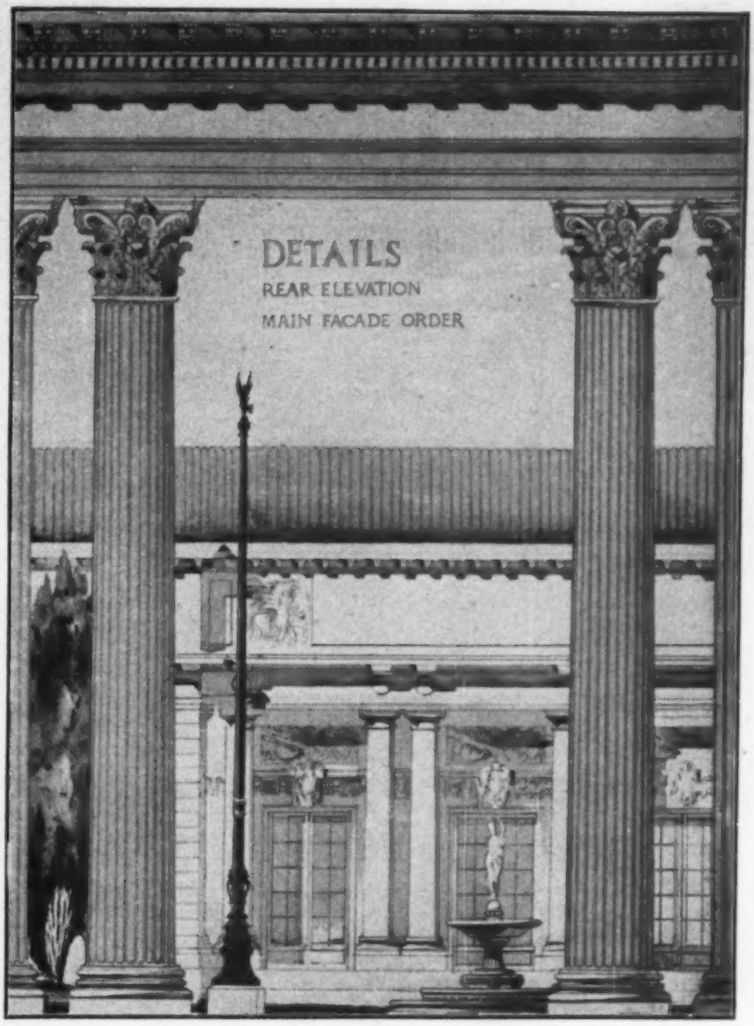
The main rooms, common-room, dining-room, and library form an elongated rectangle with semicircular ends, the centre of which forms a domed reception-room. Round this centre building, and at some distance from it, are planned a curved wing of students' rooms and other accommodation, broken in front to form a great forecourt, which is dominated by the dome before mentioned. Had the scale of the design been more modest and its architectural treatment a little more restrained it would have been easily the best of the schemes submitted.

The remaining designs are based on far smaller lines, but are, as a whole, wanting in architectural treatment and poorly drawn.

Mr. D. S. MacPhaill submits a dreary-looking design with little sense of individuality; that of Mr. F. Jenkins is very attenuated and badly proportioned—it might, like a diagram of sectional contours, have been drawn with different horizontal and vertical scales! Mr. W. M. Keesey sends a fair design; while Mr. B. A. Miller submits a very delicate and sympathetically-detailed design of an early Italian type.

We confess to being puzzled to know exactly why it is the students' work submitted for the greatest prize of the year fails to reach a higher standard. It may perhaps be the result of designing *en loge*, but it is to be hoped that the work of future years will show a distinct improvement.

Some change should certainly be made in the subjects suggested to students, so as to ensure some little correspondence between means and end. If that cannot be, it might be better to set the "stately pleasure dome" of Coleridge as a subject, when everyone would be equally free to dream in terms of three dimensions and to design spaces without the least regard to utilitarian wants. Perhaps we should obtain by these means a modern Carceri Series, recalling Piranesi, which would be a gain to the world.

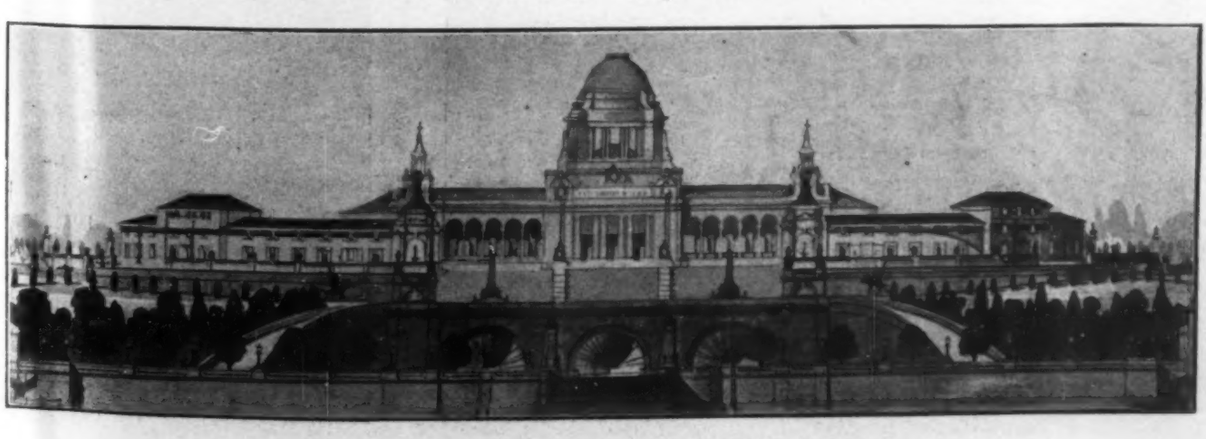


Rome Scholarship in Architecture: Mr. Ernest Cormier's Design. (Awarded Jarvis Studentship.)

Glancing through an official pamphlet published by the authorities of the British School at Rome, we came across the following sentence:—"As the Grand Prix de Rome has made the École des Beaux-Arts in Paris the first art school of the world, and as the national competitions instituted by the American Academy in Rome have undoubtedly increased the efficiency of the universities and art students in America, so it is believed that the British School at Rome will give an impetus to artistic training in this country, and will enable students of art schools not only to compete with their fellow-students, but with the picked men of other institutions." With the truth or otherwise of the statements advanced about France and America we are not at present concerned, but, after seeing the work exhibited at Crosby Hall, we cannot join very heartily in the pious hopes expressed in the concluding clauses.

It is always possible for a born artist eventually to express himself more or less satisfactorily without having been to a good art school. The fact that he has to find out for himself, by long and laborious search and repeated failures, what a good teacher could have told him in half an hour undoubtedly delays his "arrival," but it most certainly does not make it impossible.

On the other hand, the best teaching in the world will never enable even the man "with a taste for art" to produce a single work of art unless he also happens to be a born artist.



Rome Scholarship in Architecture: Mr. T. Braddock's Design.

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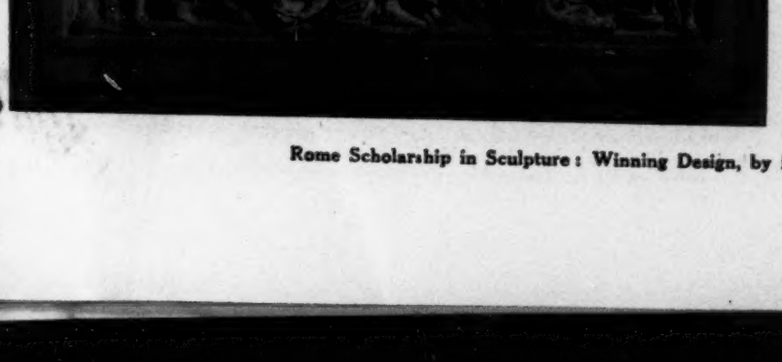
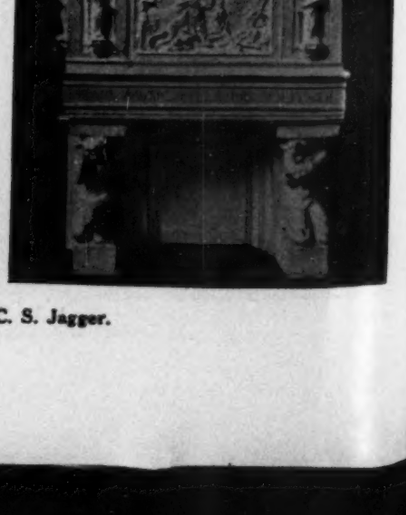
All that education can hope to do in this matter is to place the tools in the artist's hands and tell him how to use them. It need not be doubted that the British School at Rome understands this perfectly well, and we should have thought that it would have had no difficulty in getting hold of the right sort of student to benefit by its very attractive offer of three years in Italy with money enough to afford every opportunity of making the best use of the time.

But it must have been painfully evident to everyone who saw the exhibition of candidates' work at Crosby Hall that the right sort of student had not entered for the competition in large numbers. The work shown was that of the four candidates in both departments, Painting and Sculpture, whose merits had most impressed the judges in the preliminary competition held at the end of January. It might have been expected that these eight students would all have done work of very high quality, since the competition is open to any British subject under the age of thirty, but we are afraid we shall find no one to disagree with us when we say that, with the exception of the actual winners, none of the candidates showed any real promise whatever. It is possible that the conditions under which the work was done in each case—a definite subject to be completed in the short period of eight weeks—may have adversely affected some of the competitors, to whom the subjects may not have been congenial. But that need not have affected the technical side of the work, which in most cases is very mediocre indeed.

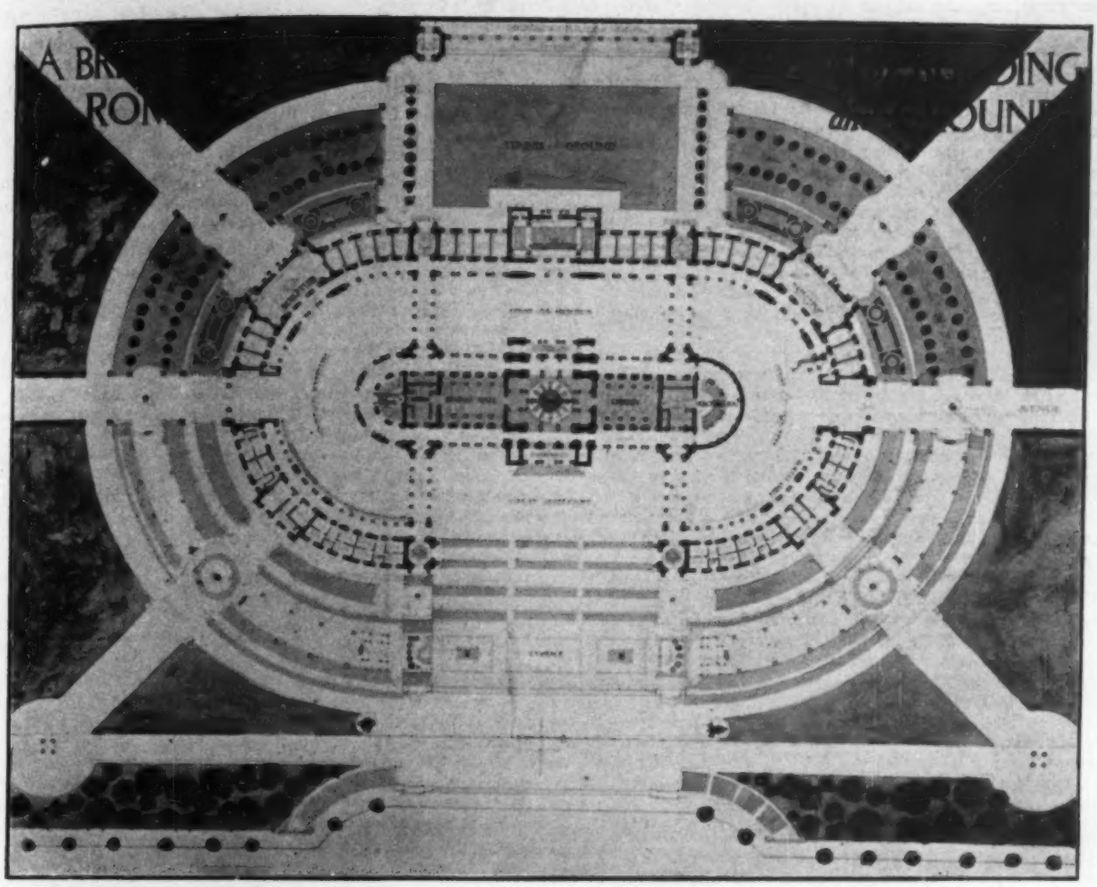
We are driven to conclude either that the present generation of art students is a singularly ineffective one or that the best students do not go in for these competitions, attractive though the rewards of success certainly are. We are not inclined to accept the former explanation, having seen plenty of excellent productions by quite young men scattered about various recent exhibitions. In fact, if some enterprising dealer were to organise an exhibition of work by sculptors and painters under thirty we are sure he would have no difficulty in finding enough material to fill his galleries and provide an interesting and probably remunerative show.

Why, then, is the general average of





Rome Scholarship in Sculpture: Winning Design, by Mr. C. S. Jagger.



Rome Scholarship in Architecture: Mr. T. Braddock's Design.

merit at Crosby Hall so low? It does not seem likely that the offer of £200 a year and a studio in Rome is not good enough to attract the commonly impecunious young artist. We confess we cannot conceive of any plausible theory to account for the facts. But were it not for the remarkable work of Mr. Jagger, who has gained the Scholarship in Sculpture this year, and the very uneven but promising panel by Mr. Benson, which is successful in the Decorative Painting Section, the awards might fitly have been withheld.

The subject set for the sculptors was "a relief 5 ft. by 3 ft. for a mantelpiece in a private concert hall, and a sketch model of the mantelpiece to a scale of one-tenth of the full size." None of the candidates had sufficient knowledge of architectural requirements to design a sketch model which can be called satisfactory, either from the point of view of providing an efficient fireplace to heat a large room or regarded simply as a decorative feature. Mr. Jagger's model followed the late Alfred Stevens' famous example, but the necessity of introducing a 5 by 3 panel has resulted in giving it a rather heavy and clumsy appearance. His panel itself is, however, something of a *tour de force*. Admirable as it is in its massing and distribution of light and shade, its chief claim to distinction is its quite masterly draughtsmanship. The subtlety and force of the modelling, the firm grasp of construction, and the restraint shown in refusing to "show off" these powers combine to give an impression of ability of a very high order. Here, it is obvious, is a man whose technical powers will enable him to express his ideas with ease and fluency. But the question obtrudes itself, Will the ideas be worth expressing? Will it do this man—whose mind, to judge it from the present instance, is still immature and sees the world in a superficial if refined way—will it do him any good to be swamped with the ideals and aspirations of the Great Dead? Mr. Benson's work is at once far less accomplished and yet more interesting. It is plain to us that he is intensely anxious to tell us something that he knows quite well, but he is still rather inarticulate, and clearly himself dissatisfied with his attempts to convey his meaning.

Memorial to R. Norman Shaw: Scotland-Yard. (*See pages 66 and 75.*)

NOTES.

Official Architects.

THE Committee of Enquiry into the Architects', Surveyors', and Engineering Department of the Office of Works has been now issued in the form of a White Paper. It is first recommended that the staff at headquarters in London shall be brought together in one building at an early date; while in the Architects' Department it is recommended that the Principal Architect and Surveyor be replaced, for the present, by three architects and surveyors on a salary scale of £800, rising by increments to £1,000, the organisation under a single head to be reverted to as soon as possible. The post of Principal Architect to Scotland is to be retained, but under a scale smaller than that of the three principal posts mentioned. The decision as to employing outside architects for large building schemes should, the Committee thinks, depend on the circumstances in each case; while it is recommended that steps should be taken to secure co-ordination between engineers and architects. Sir Aston Webb and Mr. Blomfield were both of opinion that architects in private practice designed work themselves, and that if an architect were not constantly engaged in actual designing he would lose in skill. They were not satisfied that, from the purely artistic standpoint, the State could obtain satisfactory results from the employment of an official architectural staff. As far as the foregoing argument goes, we think it is a question of how it is done. The immense architectural practices carried on by many architects in America would be incompatible with obtaining the best architectural results were it not for the fact that firms like that of Messrs. McKim, Mead, & White are really a school of designers with a tradition, and the actual amount of designing done by each member of a firm is only a secondary matter in such cases. It is a question, of course, how far an official architectural staff can be organised on similar lines to the great private American offices. If they can, the result may be equally good; but, if the organisation is merely of an administrative type, the quality of the work must suffer. Apart from this, there is what may be called the moral side of the question, which depends on the limitations we set on Individualism and Socialism, which is one of the greatest problems of the day.

The Real Problems.

THERE are two great needs in the architecture of our towns if the latter are to be improved. The first of these is regulation of advertisements, whether in the shape of sky-signs or traders' notices; and the second, some agreed system of designing adjacent shop fronts belonging to different retail shopkeepers. At present the fascia board of one shop may be 6 in. to 1 ft. higher or lower than its neighbour; it may be of wood with painted letters, or, on the other hand, an enamelled glass sign with resplendent gold background, and we may have lettering of some feet in height advocating the shopkeeper's fame and stretching across the upper windows of the front. We should like to see a competition for designs which would assume that certain adjacent and contiguous shop fronts had to be redesigned, so that the several traders had to be accommodated with shop fronts which would suit their actual needs, and which would afford a test of whether these needs could not be met without the actual destruction of all architectural unity and meaning. At present our street fronts would tend to prove Napoleon's sneer to be justified, that we are in fact a nation of shopkeepers and indifferent to any other or higher considerations. A permanent hoarding would be a much more sightly thing than the average London shop front has become, and we believe there is no reason, except that the public is apathetic, why this should continue to be.

How to Get On.

CANADA is a wonderful country, full of untold possibilities, and it is only natural that it should draw to itself the Napoleons of enterprise. We have a circular in front of us from an architect who gives his photograph and a couple of plans on his notepaper—plans laid out "to ensure economy," and plans designed "to catch sunlight," and perhaps clients also. We give below the substance of his letter, which should tempt all:—

DEAR FRIEND—

I have reason to believe I could be of assistance to you and your customers as Architect, and your difficult ideas in remodelling may require help to design. I have experience both as carpenter and joiner.

Desiring to reach your special attention, it may pay you to read every word. I extend to you my offer of service if you are intending to build in the near future. Get familiar with my Co-operative System principles to please particular people, for particular requirements, for particular sized lots.

For entirely new designs two and a half per cent. for the use of plans and specifications, and two and a half per cent. for superintendent as architect.

I have about six hundred designs of American ideas, and if pleased will furnish use of same, with desired specifications, for one and a half per cent. for superintending on same if required, the usual price as attendance on new designs.

The seemingly difficult ideas to you let me work them out for you. You may need my services, and if so I would be pleased to meet with you, or some friend you would desire to become acquainted with me. We might help one another.

Yours respectfully,

* * *

But this is not all. The same gentleman has a visiting—or shall we say professional?—card, on which his portrait is given, with the following cryptic remarks:—

My motto of conscience, extending to you this negative invitation which may mean increased valuation in your consideration, if in the building notion, I will start you right and save you ten to one my tuition as charges to you after you say the Co-Operative planning and drawings pleases you and satisfied for me to get working plans, details, specifications specially prepared.

Shall I call on you or shall you call on me?

Phone for engagement.

* * * * *

Is the writer a prototype of what the modern architect is bound to become under the stress of commercial competition, or is he, on the other hand, a last survivor of the now nearly extinct race of pirates? This is an interesting problem which we invite our readers to solve.

Motor Buses and Rates.

IT has long been recognised by county, borough, and urban district councils that motor omnibuses should make a special contribution towards the upkeep of the roads, and this principle seems now well on the way to receive statutory recognition. The Bill promoted by the Middlesex County Council for the construction of the western relief road from Chiswick to Heston empowers the Council to demand access to the books of the motor omnibus companies and returns of the mileage run by their vehicles on the new road, and to charge the companies three-eighths of a penny per mile for maintenance. This Bill, having passed the House of Commons, has now been approved by the Select Committee of the House of Lords, and its principle may therefore be considered as generally acceptable. It can hardly be denied that swift and heavy motor traffic is particularly destructive, not only to roads, but to property immediately adjoining them; while anyone who has stood on one of the steel bridges crossing the river, such as Vauxhall or Westminster, and noticed the enormous vibration caused by the motor buses compared with that caused by the trams must realise that the motor buses have far greater effect in shortening the life of the bridge. That the London County Council trams pay towards the upkeep of the roads, while the motor buses do not, is a position which no longer seems reasonable, and it is only to be expected that the London County Council should take the first opportunity to equalise matters. The threatened raising of motor bus fares to meet the new tax would seem to suggest that at present the public is enjoying cheap rides at the expense of the ratepayer; and even though it may be urged that the incidence of taxation is not a matter of supreme importance—this being a world in which the consumer seems to pay for everything in the long run, however scientifically the rates or taxes may be levied—it would be just as well to have this matter put on a reasonable basis, if only for the sake of accurate book-keeping.

Garden City Congress.

THE delegates of the International Garden Cities and Town Planning Association, assembled for the first time in this country, have inspected the garden cities of Ealing and Hampstead. Mr. Henry Vivian, the Chairman of the Co-Partnership Tenants, Ltd., said that in 1903 the cost value of the property erected by societies' aid by the Co-partnership Tenants, Ltd., was £10,237, while at the end of 1913 this amount had risen to £1,377,532. One point of importance in this and other countries is the necessity for an equitable arrangement between municipal authorities and garden suburbs with regard to open spaces. In the Hampstead suburb 100 acres were devoted to open spaces, and in Ealing 20 per cent. was so used. The cost of these open spaces was borne by the suburbs; while their inhabitants had to contribute towards the cost of open spaces elsewhere. A further point on the larger issue of the lay-out of suburban districts has, we think, been well made, which is that under the Housing and Town Planning Act the ordinary Local Government by-laws can be dispensed with, which is an admission on the part of those in authority that the by-laws are unnecessarily stringent, and that they should be replaced or modified by amendments. There can be little doubt that the cast-iron regulations as to width of new roads and their construction are a means by which the rates of many localities reach a higher figure than should be the case without compensating advantage to the community. Such regulations may be justified in certain suburban districts which are bound to become urban, but not in many other cases which arise.

Memorial to the late Mr. Norman Shaw.

OF the desirability of commemorating in some suitable way Mr. Norman Shaw's life and work there can be no doubt, but we confess to feeling that a particularly unfortunate method has been chosen. Those responsible for the work seem to have made as many mistakes as was humanly possible. A bronze-gilt medallion has been placed on the wall of New Scotland Yard, facing the Embankment. In the first place, it is too high up to be comfortably seen, being, indeed, immediately below the central window of the third story. In the next place, it is behind a tree, so that it can only be seen sideways. Thirdly, its somewhat brilliant colour is entirely out of harmony with the sombre tones of the wall on which it is placed. Fourthly, the relief is much too high for the very flat design of the Embankment façade. Fifthly, its circular form and the absence of any supporting bracket give it the appearance of being where it is by accident and of having no connection with its surroundings, as, in fact, is the case. Sixthly,—— But why go on? We have said enough to show that there is plenty of room for improvement, and it is an ungrateful task to feel it necessary to belittle the result of the generosity of those who provided the funds. Were it not that we conceive it almost immoral to condone the appearance of yet another bad memorial in London we should have passed the matter over in silence. The irony of the thing is too cruel. Here is a man of real ability and unusual achievement. When it is desired to honour his memory the best we can do is to deface his own masterpiece by sticking a meretricious-looking wafer on the front of it. It is the sort of joke we really could have done without.

THE CARVERS OF ST. PAUL'S.

By J. M. W. HALLEY.

In no branch of art was the seventeenth century more accomplished and prolific than in that dedicated to the service of the dead. There is hardly a church in England that is not the depository of some fine tomb. Many of them are masterpieces of the sculptor's craft, many are the work of patient lapidaries, but they all, the humble memorial as well as the great, have power to move us by the quality of their art. A traditional excellence is part of their contexture. The authors, for the great part anonymous, are the descendants of the Gothic carvers and stone-cutters. Numberless memorials perished in the Great Fire of 1666, and, although London is singularly rich in this form of art, few belong to a date anterior to the Fire. Nicholas Stone's figure of Dr. Donne is the only memorial in Old St. Paul's that escaped the dreadful conflagration. Very little is known of the sculptors of the Renaissance tombs. According to Stow, "The Company called by the name of *Marblers*, for their excellent knowledge and skill in the Art of Insculpting personages for Tombes, Gravestones, and Monuments in Churches, and elsewhere in Religious places: their antiquity, and what respect they have carried, is unknowne to me, nor can I find them to bee incorporated, but hold some friendship with the *Masons*, and are thought to be esteemed among them in Fellowship."

It appears, then, that at the time Stow wrote the Marblers had ceased to exist, if they had not become amalgamated with the Masons' Company. There can be little doubt that this is what happened, for Nicholas Stone, who was sculptor as well as mason, became Master of the Masons' Company in 1633-4. The Marshalls, Edward and Joshua (both Masters of the Company), succeeded Stone as Master-Masons to Charles II. Edward Marshall carried on business as a stone-cutter or statuary mason in Fetter-lane. Some of his works in sculpture include the monuments to William, Earl of Devonshire, and his Countess, at Derby; Sir Robert Backham, at Tottenham; Sir Dudley Bigge, at Chatham; and the family tomb of the Cutts, at Swaveley, in Cambridgeshire.* Joshua Marshall succeeded to his father's business on the death of the latter in 1675, and was one of the first masons employed at the rebuilding of St. Paul's Cathedral. It may be mentioned here that he was the contractor for London Monument and Temple Bar, but in neither case was he the carver.† Gabriel Cibber was employed on the first, and described as sculptor-mason, while Bushnell was the carver of the second. It does not follow, however, that Marshall was not a statuary like his father. Mr. Beresford Chancellor suggests that he executed the pedestal of the statue of Charles I. at Charing Cross.

It is a curious fact, however, that several others among the masons who worked at St. Paul's are known to have been sculptors, and the close relationship between the *marblers* and the *masons*, being in effect one, would certainly tend to make the distinction between the two crafts very slight. Edward Pearce, besides working at St. Paul's, built St. Clement Danes for Wren. In the domain of sculpture he carved statues of Edward III. and Sir Thomas Gresham for the Royal Exchange, Sir William Walworth for Fishmongers' Hall, and busts of Wren and Newton for the Bodleian at Oxford. His most important work is the monument to Sir William Maynard, in Little Easton Church, Essex. Latham, again, another St. Paul's mason, is said to be the author, in conjunction with one Bonne, of a monument to Archbishop Sheldon in Croydon Church. Latham is referred to as the City architect in connection with this tomb.‡

Although the master-masons of St. Paul's entered into contracts for the masonry, they were craftsmen themselves. In their accounts for "task work" they charge 3s. a day for their own time, 2s. 6d. being allowed for each journeyman. A curious feature about the masons' contracts is that they included the carving, so that the masters, even if they were unable to do it themselves, were responsible for it.

The carved work was executed as the work proceeded, was indeed treated as if it were part of the masonry.

In January, 1677, Joshua Marshall charges "ffor Workmanship & Carveing of 3 great Key-stones and their Curbs in the Brick Arches, being carved w^th^ water flowers and revailed at 50^s^ p. piece," and "ffor 5 lesser Keystones and their Curbs in ye side Isles carved as above at 35^s^ each." Thomas Strong charged for similar work within the sphere of his contract and also "ffor Workmanship and Carveing of one great Escallop with its Curb in the vaulting of Brick at ye East End, 08^£^ 00^s^ 00^d^." These carved water-flowers and the "great Escallop," or shell, form the keystones of the vaulting in the crypt. They were the first pieces of carving to be executed, and they are itemised in the "Accounts" as I have shown above. Henceforward to the end of the rebuilding the masons' accounts are full of details of carving. The supporting member to the window-sills is charged for by Strong and Marshall as follows:—"ffor Carveing the Trusses and Scrowles of 12 Corbells under the Stooles of the Windows at 3^£^ each Corbell."

With the exception of more important sculpture, which was given to a few sculptors or carvers, the work was undertaken by the masons. The capitals, "festoones, pces of Drapery and Lawrill," pendent flowers, cartouches, the running ornaments of leaves, lace, "raffled waves," indeed the great bulk of the carving was done in this way.

There is an item, under date 1683, in Edward Strong's account "ffor Carving 6 Cherubims heads in the Key Stones of the 5 East Windows and one over the South Window with the Scrowles belonging to ye same at 13^£^ each Key Stone," and another of a later date "ffor Carveing a Rose 3 foot 3 inches diameter 18 inches imbost at 10^£^ 00^s^ 00^d^," which shows clearly that the important work was not all given to Grinling Gibbons, Francis Bird, or Caius Cibber.

The great fame of Grinling Gibbons has overshadowed that of the other carvers, but that is no reason why it should be obliterated, especially as so much of the masons' carving is architecturally so complete, technically so perfect. The models of much of it were superintended undoubtedly by Wren himself. When it is remembered that a building such as St. Paul's had never been seen by any English workman, it will be realised how much the initial impulse of every part of it was due to Wren. Much of the ornament was of a kind quite new to carvers; the Roman flowers in the vaults, for example, and numberless ornaments which could not possibly be achieved without the assistance of the scholarship of Wren. Technically the carving is perfect. It is interesting to compare the work of Stone at the Banqueting House, Whitehall, with that at St. Paul's. The early work is stiff and formal, while the later is free and fanciful, so great was the progress made in fifty years.

Grinling Gibbons' name does not appear in the "Accounts" until June, 1694—that is to say, twenty years after the work was begun—in which year he charged "ffor carving the Severall Ornam^ts^ of 4 Spandrills in the Leggs of the great Dome at 32^£^ each Spandrill." From that time he must have been constantly employed for several years. He carved in stone twenty-six "ffestoones under the Windows of the Church" before he began his greatest work in the choir, in oak and lime-wood. The carving in the choir was finished by September, 1697. The account for this work is so detailed that it would be possible to follow it item by item. Here it must suffice to give a few extracts. "Carving done about the Bishop's Throne" is particularised as follows:—"2 Collums enricht, each 7 foot long, girth 2 foot 9 inches ½; 2 round Capitalls and 2 Pillaster Capitalls containing 5 faces; 3 Cartoozes, 12 inches by 11 inches; carving ye palme in ye front and for ye Ornament of Head containing 8 Scrowles with Cherrubs heads ffestoones and Miter and finding Wood, 90^£^ 00^s^ 00^d^." This, however, does not represent the whole cost. John Smallwell, Joyner, charged "ffor the Bishop's Throne with Pillers, Pedistalls and capitalls, and stuffe for Carver etc. 82^£^ 00^s^ 00^d^."

Although Grinling Gibbons' charge included for "finding wood," some of it at least was found for him, as the following item shows:—"To Roger Davis and Hugh Webb ffor 10 days work of a Joyner in preparing ye lime tree for Mr. Gibbons to carve for ye Choire at 3s. p. day, 01^£^ 00^s^ 00^d^." A larger sum was paid to Charles Hopson "for time spent and stuffe used in preparing the wainscot for ye eight great Figures for ye top of ye Organ Case, and the six Boys and two Crownes and a Miter and preparing the Lime tree for ye Carving in and about ye Choire, viz., 77^£^ 13^s^ 06^d^." Some of these items can be identified in Grinling Gibbons' account, as:—"8 Statue Angells at 20^£^ each," "2 Bassaro Leaves with Boys and Garlands at 14^£^ each," and "2 Kings Armes with 4 Boys, 58^£^ 00^s^ 00^d^."

It is almost needless to say that Grinling Gibbons did not execute all his work with his own hand; it would have been a physical impossibility. Doubtless it was all designed by him, but in the actual carving he was assisted by journeymen. There is an item in the "Accounts" which shows that he made drawings of his work. It occurs in the account of Charles Hopson, Joyner, and reads as follows:—For "glueing of Boards for Mr. Gibbons to draw on."

Caius Gabriel Cibber, the father of the actor, dramatist and wit, worked at St. Paul's towards the end of the seventeenth century. The first notice of him occurs in the "Accounts" of January-March, 1699, when he charged "ffor carving ye south ffrontispiece, being a great Phenix 18 foot long and 9 foot high, 100^£^ 00^s^ 00^d^; ffor a modell of a relieve with two ffigures and emblems for ye said ffront, 10^£^ 00^s^ 00^d^; ffor a Modell for ye Phenix, 06^£^ 00^s^ 00^d^; ffor three Modells of Antique Lucerns for ye Pinacles, 06^£^ 00^s^ 00^d^."

The second item obviously refers to the north pediment, carved with the King's arms, supported by figures, although stated otherwise; whilst the last may be either the urns with which Wren wished to finish the blocking course at the level of the roof, or the "Incense Potts," mentioned in his next account. This appears under the date of July, 1700, and reads:—"For Masoning and Carving of Four Incense Potts upon the Peers of the South Ascent at 30^£^ p. piece, 120^£^ 00^s^ 00^d^; for 4 double Festoones with 8 Cherubims Heads upon the pedistalls at 13^£^ each Festoone, 52^£^ 00^s^ 00^d^; for making a Modell of a Compossit Capit^ll^, 4 foot high, 04^£^ 00^s^ 00^d^." These urns, although very much decayed, are still beautiful, and are amongst the best pieces of carving in the Cathedral.

Another master-carver, called Jonathan Maine, who was in every respect a true master of his craft, executed considerable works at St. Paul's. It was he who carved the admirable screens of the two morning prayer chapels, the wood work of the library and the vestries. In June, 1701, he made the following charges:—"ffor carving the Capital of a Composit pilaster in Free Stone for the Inside of the Dome, 05^£^ 00^s^ 00^d^; ffor carving the Bishops Coat of Arms and mitre with Mantling and other Ornaments under a window on the outside of the Consistery, 13^£^ 00^s^ 00^d^." And towards the end of 1703 there is another account:—"ffor 346^f^ 8^i^. runing of Raffled Leaves, Shells, Etc., in the Great Moulding at the foot of the Pillasters in the Dome 14 in. high and 4^in^ Cutt in girt 21 inches at 8^s^ 6^d^, 147^£^ 06^s^ 08^d^; for 330^f^ 8^i^ runing of Lace in the Upper Member 3 In. high and Cut in 4^i^ at 1^s^, 16^£^ 10^s^ 08^d^; for 10 fo. runing of the great moulding cut in wood to set up for a pattern, 04^£^ 00^s^ 00^d^." Whilst Jonathan Maine still continued to work in the interior of the Cathedral, "carving 631^f^ 6 ruing of Freeze under ye Stools of ye Windows West of ye Choire with Caparole and flowers, huskes, leaves, etc.," another carver appears on the scene. This is "Francis Bird, Sculptor," as he is called in the "Accounts." By March, 1706, he had finished the great panel over the west entrance and received £300 for it. His description of it is so interesting that I give it at length. It reads:—"For Carving the Bass Relivo being 16 foot broad and 14 foot high and ye princip^l^ figures 18^i^ Imbost, ye other about 9^i^ one w^th^ another, the whole agreed upon a sup^ll^ gir^t^ is abo^t^ 406 fo^t^, and it likewise contains nine large figures with a large Italian Molding round the Same."

In December of the same year he had completed the carving of the pediment, which is "in length 64 foot and in height 17 f. being the history of St. Paul's Conversion, and containing 8 large figures, 6 whereof on horseback and several of them 2½ f^t^ Imbost." For this work Bird received £650. There is a small plaster model of it in the library at St. Paul's, which is almost certainly the preliminary work of the sculptor.

The next work on which he is employed is of much less importance, and he is called "carver" instead of "sculptor." In July, 1708, he charged "for moduling a pine apple for ye S. West Tower, 1^£^ 1^s^ 6^d^; for Moduling

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* "The Hole Craft and Fellowship of Masons."

† *Ibid.*

‡ "Lives of the British Sculptors." Beresford Chancellor.

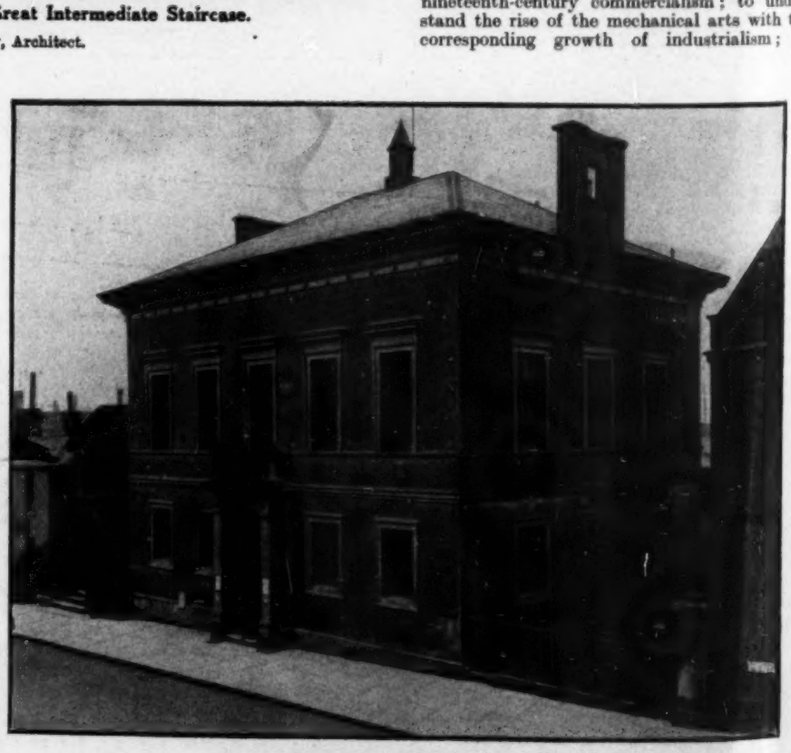
King's College Hospital: The Great Intermediate Staircase.
Thomas Bellamy, Architect.

the Scrowls, Ball and Cross, Etc., for the Lantern to ye Dome, 2[£] 3[s] 0[d]: for Carving one of the Scrowls for the Copper Smith to make his molds by 4[f] 6[i] high 20[i] deep and 18[i] in the face, 5[£] 0[s] 0[d]."

Between 1720 to 1725 Francis Bird carved the fifteen statues which stand to-day above the pediments of the Cathedral. For these figures, which are between 11 ft. and 12 ft. high, he received the sum of £2,040. Perhaps the most celebrated work of this artist, who has been called the "Founder of English Sculpture," is the monument to Dr. Busby, a headmaster of Westminster School (Wren, as a boy, was taught by Dr. Busby), in the nave of Westminster Abbey. Unlike Dr. Donne, who stood for his portrait in his winding-sheet, Dr. Busby "would never permit his picture to be drawn, and the moment he was dead his friends had a cast in plaster taken from his face, and thence a drawing in crayons, from which White engraved his print, and Bird carved his image." Another of his works was the monument which stood for many years in front of the Cathedral until it was replaced by a copy by Belt.

Francis Bird was born in Piccadilly in 1667. He studied in Brussels under a man called Cozens, and afterwards, it is said, proceeded to Rome on foot. In 1686 he returned to England, when he sought employment with Grinling Gibbons and Caius Cibber,* so that he may have done journey-work at St. Paul's before he began to work for himself. He died in 1731, at the age of sixty-four, ten years after Grinling Gibbons, and thirty-one years after Cibber.

* "Lives of the British Sculptors." By Beresford Chancellor.



Hitchin Town Hall.
Thomas Bellamy, Architect. (1839.)

THE MOST UNEXCEPTIONABLE MANNER:

AN APPRECIATION OF THE WORKS OF THOMAS BELLAMY, 1798—1876.

A SHORT while ago the writer of this article met an aged architect, who entered the profession during the late thirties. This gentleman remembered Harvey Lonsdale Elmes as a fellow-pupil in his father's office; he was eloquent of the spirit of that period and retained strong views concerning the mistaken zeal of the pedants who advocated pure Greek for architectural expression seventy years since, and further remarked that throughout his career he had held equally strong views in favour of an Anglicised version of Italian architecture. During this interesting conversation he spoke disparagingly of the lack of Classical culture among the public of to-day; he quoted Professors Cockerell and Donaldson in support of his theories, and from a deluge of reminiscences described the ambitions and achievements of many architects whose names to-day are overshadowed by the passage of time. This chance meeting gave the writer food for reflection, and he determined to record the career of one of the architects discussed.

When we review the events of the last thirty years and seek to dissociate the various abortive revivals from the main trend of the Classic tradition we are astonished to find how closely both the tradition and the men who continued its precepts, however slightly, link the earlier and stronger phases of that same tradition to the policy which directs architectural design to-day; and also we are forced to appreciate the efforts now being made to extend a broader acceptance of the Classic ideal. There are some narrow-minded persons who look askance at designs later in date than the middle of the eighteenth century, asserting that the true Neo-Classic ended abruptly with the advent of Sir William Chambers; others admit certain buildings, erected as late as the year 1800, as being decadent specimens of the more vigorous phases of the Classic movement, but refuse to discuss anything later. Things must be old to be appraised. To such bigots the nineteenth century is a closed book, yet to the intelligent the cycle of the last hundred years affords a retrospect of piquant interest. We are beginning to grasp the meaning of the merging of the eighteenth-century culture with nineteenth-century commercialism; to understand the rise of the mechanical arts with the corresponding growth of industrialism; to

appreciate the fact that these changes are indelibly stamped in the aspect of the buildings. During the nineteenth century architecture was developed on such an extensive scale that the exponents lost sight of that need for concerted effort which is the soul of a great style. Individualism became the order of the day, and various dissimilar styles were exploited. But certain coteries of cultured men held allegiance to the main issue of Classic architecture, and worked steadily in pursuit of their convictions; their work could not wholly escape the evil conventions of the period during which they flourished, and perhaps this is the reason why so much architecture that is overloaded with ornament, but which otherwise is consistent in design, is generally considered taboo. One very important fact remains to be discussed; it is the following:—The Neo-Classic tradition, although weakened by the Gothic diversion, permeated and degraded by a dressing of unchastened ornament, coarsened by the application of heavy and tasteless attributes, and ridiculed by the exponents of the so-called Queen Anne Classic, who, afraid of giving offence to either camp, compromised between Gothic and Classic, has, notwithstanding, survived such influences. Of course, it can be urged, and quite reasonably, that the practice of Classic architecture to-day is altogether foreign to the main tradition, even in its widest and broadest acceptance; unfortunately the vernacular style is a travesty of that which it seeks to perpetuate. But such a condition of things is inevitable when, after a period of stagnation, a style is being slowly awakened to renewed life. We are to-day in a better position to discuss the evolution of architecture as a living art than was the case thirty years ago. No longer does the bogey of the right style to employ haunt our ideas. The problems of domestic architecture are now universally recognised as requiring special study and interpretation; the romantic movement fostered by the novels of Sir Walter Scott taught us the lesson that mediæval art can be studied to exercise a beneficial influence on the design of ecclesiastical buildings. And to-day, after years of neglect, civil architecture is again attracting serious attention, and forms the chief care of those interested in the preservation of the amenities of great cities. Such are the truths and lessons taught by hard experience.

Even those amateurs and journalists who pose as "lovers of the arts," and point to ferro-concrete as a means for future architectural expression, are secretly forced to acknowledge the importance of the right composition of parts as a determining factor in the aspect of a structure, irrespective of the adoption of certain well-worn *motifs* which architects employ as idioms, but which to the untrained eyes of amateurs spell tame submission to archæology. In architecture the theory of composition, both as regards plan and elevation, is the only thing that counts; the minor considerations of truth, beauty, and fitness all fall rhythmically into place, once the subtleties of composition are satisfactorily arranged. The acceptance of the foregoing theory, which embraces a study of form and colour, confutes the vague suggestions voiced from time to time that creative art to be living and functional must be dissociated entirely from precedent. Such doctrines are pernicious and false, as well as being in direct opposition to the history of architecture as a fine art.

Having lapsed for a space from the real purpose of this article, we must return to the main object under discussion.

It is not generally known that many architects who entered upon active practice during the first quarter of the nineteenth century survived until the last quarter. We have the notable case of Decimus Burton, who, achieving fame at the close of the Regency and continuing practice in a desultory way through the sixties, was almost forgotten at the time of his death in the early eighties. The talented Pennethorne also linked the taste and activities of his uncle, John Nash, to the period when the reputation of Norman Shaw as a genius was rising in the estimation of the public. And other illustrious names could be brought forward to support the contention of the overlapping of certain phases in the Neo-Classic tradition. The scope of this article, however, is of necessity limited to an appreciation of the work of an architect whose works demand recognition as being of superlative merit.

Thomas Bellamy was a pupil of David Laing, the architect of the Customs House; he was a friend of Charles Fowler, and an intimate of Thomas Lee and Sir William Tite—all of whom were employed by David Laing on various works connected with that architect's practice. Bellamy's opportunities for continental travel were few, and his practice was a limited one, but he gave of his best, pursuing his career calmly and cultivating a taste naturally refined. Professor Donaldson says:—"He worked out elaborately every detail of design or construction in all the minutest particulars, and sometimes he puzzled the very workmen themselves by his peculiar profiles and combinations, as he was a purist to excess. In his early days Greek architecture was the prevailing style, founded upon Stuart's Athens and the valuable works of the Dilettante Society. In 1830 Bellamy entered into practice on his own account and carried out works at Redbourn Hall for the Duke of St. Albans. In 1839 he built Hensham Chapel, and in the same year designed the Town Hall at Hitchin (see illustration p. 68). This building is a refined and tasteful structure, relying solely on excellent proportion for effect. The division of the upper and lower stories is worthy of careful study; the modillion cornice is finished under the bed mould with an enriched band, and in regard to the proportion and spacing of the windows the adjustment of void to solid is perfect.

Bellamy entered for several important competitions, including the Fitzwilliam Museum at Cambridge in 1835 (this building was won and erected by Basevi); the Collegiate Buildings, Camberwell, 1833; Brentford Union; and the Great Southern and Western Railway Station at Dublin, the latter being won and built by Sancton Wood. In the public offices competition he gained the third premium for the Foreign Office, his plan being highly approved for its internal arrangements.

In two other competitions he was successful, namely, King's College Hospital, in Carey-street, Lincoln's Inn-fields, and the Law Fire Insurance Office, Chancery-lane. King's College Hospital was demolished two years ago, but the illustrations (see inset illustrations and p. 68), by Mr. Hanslip Fletcher, present an adequate record of the work. This building had no pretensions to monumental dignity, but contained features of exceptional interest, including the great intermediate staircase 44 ft. by 31 ft. and 63 ft. high, and the theatre and chapel, the latter with exquisite decoration, on the first floor. The design of the structure was very imposing, its effect depending entirely on the magnitude and disposition of its masses, which were very telling, and the character and purpose of the building were unmistakable. In the design of the Law Fire Office in Chancery-lane Bellamy's technique is seen at its best.* The treatment is astylar, divided by slight cornices into three horizontal divisions; the rusticated surfaces are in excellent taste; the entrance portico is bold in scale and serves as the focal point, the *piano nobile* being emphasised as the dominating feature in the design.

With regard to the entrance doorway, the enriched pilasters should be closely studied; the purity of the detail pays homage to the highest examples of Italian architecture, particularly the Cinquecento work of the Venetian school in the Chiesa d'Miracoli. It is interesting to notice the change in taste between the work of Bellamy and that of Lewis Vulliamy which adjoins the building, although less than thirty years separates the date of the two structures (see the right-hand corner of our inset illustration). But, fine as the Chancery lane façade is, the reputation of the architect is enhanced by the design of the exquisite front facing Bell-yard (see inset illustration), a building worthy of comparison in composition and detail to the polished style evolved by Professor Cockerell. In this design the building is set back from the general face of those adjoining it on either side, and buttresses are introduced as wing screen walls; the carved detail illustrating the various implements used by firemen is symbolical and appropriate. One of the architect's tracings for this work is still extant, and bears the following note:—

> **Enrichment of West Front**
> **To be executed in Portland Stone**
> **in the most unexceptionable manner.**
> **Thos. Bellamy.**
> **Augt., 1875.**

This beautiful example of Neo-Grec and Italian art affords a distinct contrast to the casual style which masquerades as Classic to-day. Overshadowing Bell-yard, Street's monument to the Gothic revival towers high above the diminutive front; Wren's magnificent gateway looms mysteriously in Fleet-street; Bellamy's design, however, is so unobtrusive, so gentlemanly in character that it passes almost unnoticed.. The façade in Bell-yard was the architect's last work. It was completed and occupied in 1875, a few weeks before his retirement to a sick-bed, but he frequently sent to see if anything further were required. At one of the visits of Mr. Bell, the Secretary, to his bedside he happened to mention that he should have to order a handle for the door in Bell-yard. Bellamy begged him not to buy one ready-made. Within a few days he sent Mr. Bell a drawing made by his own hand on his sick-bed, beautifully delineated; this is still in position. Donaldson remarks:—"The same scrupulous worker to the end."

There are several other works by Thomas Bellamy which must be recorded; they include the following:—Corsham Court, built for Lord Methuen, 1848; a church at Malvern; the Boys' Home, Camden Town, 1870; Heston Church and Sutton House, Heston; a church in Camberwell-road; Brookfield Church, Highgate; and a monumental tablet to Bishop Villiers in St. George's Church, Bloomsbury.

To this slight appreciation of the work of an accomplished architect one line must be added in conclusion. The most important index to the life and character of an artist is to be found in a study of his works.*

* There is a coloured elevation of this façade to a large scale in the Library of the Royal Institute of British Architects.

* The writer is indebted to Mr. Daymond, of Messrs. Daymond & Sons, who executed many works for Thomas Bellamy, for the loan of certain original drawings.

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ROYAL SANITARY INSTITUTE CONGRESS, BLACKPOOL.

THE Engineers' and Surveyors' Section met again on July 8, under the presidency of Mr. J. S. Brodie.

Seaside Amenities.

Mr. J. W. Hipwood (Borough Surveyor, Morecambe) discussed some of the matters which require special attention by engineers and surveyors to seaside health resorts. Amongst the primary requirements was that of spaciousness, and he considered that as a general rule no engineer should hesitate to recommend his Council to go seawards and widen their promenades wherever there was not already ample provision of air and sunshine space. Public seaside gardens being naturally somewhat restricted as to width, he was of opinion that a formal and balanced treatment was preferable to a treatment involving the construction of numerous tortuous paths, which often showed very little reason for their existence. The author dealt with seating, shelters, bandstands, bathing pools, etc. On the subject of paints and enamels used on seaside public property, it was well to mention the influence resulting from the use of the best materials and appropriate colour schemes. Red oxide paints might be very lasting and a good preservative of sea-splashed ironwork, but its colour was depressing in the extreme. As, however, genuine English white-lead or zinc white could be used as the basis of most paints, equally enduring and much more pleasing effects could be obtained by their use for all coats except the first. Green, gold, ivory, cream, or white always pleased the eye, and if employed in simple colour schemes satisfactory results would ensue. Enamelled or varnished finishing coats proved a decided economy in the long run, and retained their freshness a much longer time than an ordinary coat.

Considerable discussion followed, a great deal of which was devoted to the absence of "greenery" at Blackpool, which the Chairman subsequently explained was due to the heavy storms in the winter.

Blackpool Sea-Water Supply.

A description of the Blackpool Corporation sea-water supply was given by Mr. F. G. Wolstenholme. The undertaking is situated at the northern end of the town, and was purchased by the Corporation in 1903 with a view to the extensive use of sea water for various municipal and sanitary purposes. The capital of the works stands at £16,580, made up of pumping-station and installation, £9,030, and distributing mains, £7,550. During the past year 6,284,480 gallons of water were used by the cleansing department, and the sea water is also supplied to the various hydros,

hotels, etc. Although the works are not at present self-supporting, the position financially is improving annually, and the Corporation are quite satisfied that the benefits of a good pure sea-water supply quite justify the outlay.

Sewage and Storm-Water Plant at Blackpool.

A detailed description, with diagrams, was given by Mr. H. Banks of the sewage and storm-water pumping plant at Blackpool. A spacious pump chamber has been constructed under the promenade. The pumping plant consists of two electrically-driven monovane centrifugal pumps, each of which is capable of delivering a maximum quantity of 27,000 gallons of screened sewage per minute against a total head of 16 ft.

ENGINEERING AND ARCHITECTURAL SECTION.

Mr. Walter Cave, F.R.I.B.A., was the President of the Engineering and Architectural Section, which held its sittings on July 9 and 10.

Domestic Architecture and Sanitation.

The President, taking "Domestic Architecture and Sanitation" as the title of his address, said: "It is generally supposed that an architect's connection with the sanitary conditions of a house is summed up in the one word, "drains." Whilst there is no doubt that he is primarily responsible for these important and necessary adjuncts to all dwellings, I venture to think that there are other matters which come within his province which have a great deal to do with the health and comfort of the inhabitants, and I shall endeavour to point out some of those details in the design of a house for which he is responsible, and which, if not carefully considered from the outset, are much more difficult to rectify in the future than the actual drainage.

Dirt of all kinds is undoubtedly one of the greatest enemies to health, and its evil effects can be largely avoided by taking due precautions in designing the details of a house and its fittings. For instance, the floors of sculleries, kitchens, larders, bathrooms, water closets, etc., which it is usual to make of some hard impervious material, such as tiles or cement, should be made to join the walls with a hollow angle, and not at a right angle which no broom can clean, so that in the constant washing they require a rim of dirt is not allowed to remain all round the rooms.

It has been argued that cement floors are inclined to become dusty with wear and are cold to stand on. As an alternative, I know of a distinguished architect who lays these cement floors in the offices of his houses, and after they are thoroughly dry has linoleum or a cork carpet glued direct to the cement, with good results.

Hard wood floors, such as oak, teak, and maple, are better than deal if they can be afforded, but where deal boards have to be employed, as is usually the case in bedrooms, they should not be washed with a scrubbing-brush, as this tends to make the floors swell and then contract, so that the joints eventually become wide open, and, if for economy's sake they are not tongued or otherwise jointed, the water and with it the dirt is deposited on the top of the plaster ceiling of the room below. Anyone who has seen the floor boards removed from a floor with "butt" joints will appreciate what I mean, and shudder at the accumulation of dirt, which is a menace to health If deal floors have to be used, even of the cheapest sort, I think the best treatment is to stain and wax polish the floor boards so as to ensure a hard surface, which should be wiped over with a damp, not wet, cloth.

Another important point is the window, generally the only means of ventilation, both its position in the wall and its construction. From the point of view of health the top of the window should be near the ceiling, and that part nearest the ceiling made to open easily. If the window is a sash one, known in France as the guillotine, this is easily achieved, but with the casement it is not so simple. Should there be a transom, there are many methods of opening the upper lights involving gear, or cord, or a pole, but all those appliances are of a more or less complicated nature, and as these lights are usually inaccessible, care should be taken to select the simplest form.

The cleaning of windows must not be overlooked, and the casements which have a hinge halfway along the sill so that they open both outwards and inwards are very easily managed, and unless in a very exposed position are watertight.

Again, the position of the window in relation to the door, bed, and fireplace is a matter that often seems to be left to chance or entirely subordinated to the exterior elevation. How often do we find, especially in hotels, a fair-sized bedroom, in which it is impossible to put a bed without its being in a direct draught, a very serious mistake which is often impossible to correct. Speaking of the position of bed and window reminds me of a certain client of mine who found fault with a bedroom I had planned for him, where the bed was against the wall at right angles to the window, an ideal position, I thought, which I had taken some pains to arrive at. He complained that he did not like facing the light. I explained that I thought this was not the case, and that he would have had cause for complaint if the window had been opposite the foot of the bed. His reply was that he did not sleep on his back, but on his right side! This was a view of the matter which was new to me, and I now consult my clients on this point beforehand.

Dirt and dust can be minimised nowadays to a large extent by the use, where possible, of electric light, which not only does not deposit a dirty layer on all available surfaces, but from its simplicity and effectiveness can light up many of the dark corners which we find in old houses before it becomes almost universally used. There is also the vacuum cleaner, which has now become a simple and economical method of getting rid of dust in the household, and if installed at the very beginning of things not an expensive luxury, and I firmly believe will soon be considered a necessity in every house.

Another distracting cause of dirt is the hot-water pipe, which we cannot do without. The greatest care should be taken in casing it and covering it with non-conductive material, though this latter is often a horrible mass of dirt, and only hidden by a thin casing of wood, which is usually cracked at all its joints, which are in perpetual mourning with their black edges. How can this be overcome? Firstly, what is the cause? The pipes being hotter than the wall of the room, there is a constant current set up between the hot and the cold surfaces, and where this takes place the dirt floating in the air is deposited on the rough edges between.

Another instance of this, and one which is not always understood, is that one often sees a white line in the corner of a room, especially where the inner wall joins the outer. This again is due to two surfaces of different temperature. The outer wall, varying with the outside temperature, is generally several degrees hotter or colder than the inside walls, hence a current of air is set up between the two, and, as a current does not enter an angle with the precision of the paperhanger, it shirks the actual corner itself and deposits the dirt on either side, leaving, as I have said, a white angle innocent of dirt. This, to a large extent, can be avoided by again a precaution in the first place. A good hollow outer wall, with its air-cushion, is an excellent non-conductor, and when the two walls are the same temperature no draught is set up. Draughts are not only dangerous and disagreeable in themselves, but they are always laden with dust, which is deposited, as I have shown, in all kinds of places—doors, keyholes, badly-fitting windows, etc. The greatest care should be taken with all joinery in a house, and here again the architect comes in, and money spent on good joinery is well spent.

The amount of dust that can be collected in book-shelves is extraordinary, and in towns bookcases should have glass doors; but this is, to my mind, objectionable, and I think a great deal of the pleasure to be got from books is done away with if doors have to be opened before a volume can be reached.

Amongst the many details in a house that require special attention are the sanitary fittings. Baths, for instance, should not be cased in, and should stand clear of the wall so that they can be easily cleaned, and should be carefully selected so that they empty themselves quickly and thoroughly. The same also applies to lavatory basins and sinks. Cupboards frequently placed under both the latter fittings should be avoided, as they are generally receptacles of all kinds of rubbish which collects dirt and dust.

Wardrobes and cupboards should all have a floor of their own raised a few inches above the floor of the room, not only to facilitate cleaning out, but to prevent the dust on the floor entering under the doors whenever the room is swept.

Dust traps should be avoided as far as possible, and can be, with care and thought in designing a house and its fittings, not to mention furniture.

These remarks apply more particularly to town houses, where dust is ever present; but even in the country this cannot be avoided altogether, and the same care in designing is required. The open fire, almost a religion amongst English people, is responsible for a great deal of this dust; but the more modern kinds of slow combustion grates, with a grating through which the ashes fall into an enclosed receptacle, can reduce this dust to a large extent, and are certainly a most economical form of the open fire. Gas fires and gas cooking stoves are gradually superseding the open coal fires, and are cheap and efficient, and overcome many of the above objections and help to minimise work, which is, needless to say, an important point in domestic economy to-day.

Cupboards, the delight of womankind, should be lit if possible. The opening of the door so as to let the light in is often neglected.

The old houses which delight the housewife, with their deep cupboards, which were usually hideous dust-traps, were often due to thick walls and to bad planning, or rather to no planning at all. The rooms seem to have been arranged quite haphazard, with ill-lit passages at various levels. All this can be rectified with care in the first place. I heard of an architect who told his client's wife that he always began his plans with the cupboards and then fitted his house round them!

The careful planning of a house with a view to economising service is becoming more and more important, and the inside lines of communication between the various parts want careful attention. Again, the position of the larder is very important from the point of view of health. How often do we find it placed between the servants' water closet and the coalhole, and the dust-bin under the window outside! Care and experience in planning are most necessary to overcome difficulties, and these defects are usually due to ignorance, inability, and laziness on the part of the architect.

The constant use of whitewash in outbuildings is greatly conducive to a general healthy state of things. It is to be regretted that in many places people are getting above it, or only practise it where compelled to do so. Disinfecting whitewash can be made simply and cheaply by adding carbolic acid to the ordinary limewash, but there is a point in connection with limewash that comes within the architect's province, and is one of those items I have mentioned which, if overlooked during the building of the house, cannot be easily rectified. Whitewash is usually put on an unplastered brick wall, but if the bricks are wrongly pointed these walls are great receptacles of dirt. The usual builder's way of pointing brickwork is to hold the point of the trowel downwards, which produces an inverted weather joint which leaves a ledge ¼ in. to ½ in. wide on the top edge of every brick, on which the dust collects. The trowel should, of course, be held with the point upwards, so as to have no shelf or ledge. It is astonishing how difficult it is to ensure this unless it is specially made a point of.

Again, the storage cisterns for drinking and ordinary domestic water require special attention. They are frequently placed in the roof, which in itself may or may not be properly boarded and dust-proof. Generally it is not, and the condition of these cisterns holding the drinking water for the house are disgusting. They should always be properly cased and covered in, easy of access, and lit in such a way that they can be readily cleaned. In towns where there is a supply from some company a tap should be always placed on the main for drinking purposes before the water enters any storage cistern.

The above remarks do not by any means exhaust the subject. I have purposely not touched on the main points of an insanitary house, namely, the drains and the sanitary arrangements, about which many books have been written, and concerning which most people have some acquaintance, and with which are connected a great body of highly-trained and skilled professional men, not to mention the sanitary boards with their ever-vigilant inspectors. These are what may be termed the obvious points of healthy houses. The improvement in this side of sanitation has been very great during the last few years, and it is beyond question that meetings such as these

which give prominence to the importance of these matters are doing a great and valuable work, and the more the ordinary public understand these questions the better will be the result.

I have endeavoured to point out a few of the minor points in the building of houses which mainly concern the architect and have a decided influence on the health of the future inhabitants, and, though these points may seem small and trivial, I believe that it is in the attention to them as well as the more obvious ones that a more sanitary condition of things will obtain."

Sir Henry Tanner, in proposing a vote of thanks to the President, said the question of dust was of the greatest importance, and the more an architect laid himself out to prevent its accumulation the better. As to heating apparatus, his experience was that radiators were more easily managed than pipes.

Sanitation of the Country House.

Mr. W. C. Tyndale, M.Inst.C.E., submitted a paper on "The Sanitation of the Country House," in which he said that the questions which at once occurred to the mind were:—Did the sanitation of a country house differ from a town house to such an extent as to require separate consideration, and were not country houses in as good condition in this respect as town houses? Was it possible that they had escaped the flood of sanitary enlightenment which had swept the country generally? For years past there had been considerable activity amongst the many mansions and lesser country houses. Country builders had been very busy, architects and sanitary engineers, not to say upholsterers, general providers' stores, and others, had all carried out a considerable amount of work in connection with country-house sanitation. Notwithstanding this, it was, he believed, only too true that there still exists many houses which were far behind the times in matters of sanitation. The great point was the disposal of the sewage, as the rough and ready and easy way of getting sewage out of sight and out of mind available to their forefathers by discharging it into a stream was no longer available. Given a house situated on an elevated site with ample acreage around, and subsoil of a porous nature, the problem might be still fairly easily solved either by adopting surface disposal, after straining or liquefying or by soakage from sub-irrigation drains, or by means of a soak well, the latter only being admissible if water-supply considerations did not interfere. Where the site was flat the real difficulties began, as the sewage had to be lifted. Where the site was not only flat, but the soil was heavy clay, the conditions necessitated the introduction of artificial bacteriological means of purification. Many devices had been devised to purify domestic sewage on these lines, and of all the arrangements for effecting the first stage of the process the Libdin slate bed was probably the best. The author next dealt with the second stage of purifying the sewage by oxidation, and said that any of the usual methods, if properly designed, would do the work. The question of which form the installation should take could only be determined by the sanitary engineer after taking into consideration all the necessities and circumstances of the case.

House Drainage.

Mr. A. Race (Borough Engineer, Barrow-in-Furness) described the system in operation in his borough for house drainage where the intercepting trap is not in use. He explained that the subject was of present interest owing to the Report of the Departmental Committee appointed by the Local Government Board, which came recently to the conclusion that an intercepting trap on house drains was not a necessity. The chief feature of the Barrow system was that the main house drain was not trapped from the sewer, a ventilating pipe being placed at the highest point of the drain, which acted at a ventilator both for the sewer and drains.

Supply of Hot Water to Artisans' Dwellings.

Mr. Alderman Burridge (Bedford) described the system of supplying hot water to artisans' dwellings. He explained that he had recently erected twelve seven-roomed houses, consisting of front room with bay-window, sitting-room, three bedrooms, kitchen, scullery and bathroom combined, all rooms fitted with tile grates and hearths, electric light, at a rent of 6s. per week, or, say, £15 10s. per annum (not including rates). In the kitchen was fixed a range with flues communicating with the copper, built directly at back in the scullery in the usual way. Between the copper and range was fixed an horizontal damper to shut off the heat when not required for the heating of the copper. The usual copper furnace door and frame was fixed; in front of this was an airtight door and frame; by this means the copper furnace was made airtight. When the copper was required for washing purposes this door was removed and the copper used in the usual manner. There were also three soot doors. These give access to any part of the copper flues for cleaning purposes without resorting to the old-fashioned methods of using gunpowder. The copper was provided with a cold supply, entering near the bottom, connected direct to main supply, and controlled by a stopcock, an open draw-off being fixed close to the top and continued over bath. The connections to the copper being easily detached to allow for removal of copper, if required, without disturbing the brick or other pipes. The bath was an ordinary 5-ft. (Sienna) roll-top with brass trap and outlet, the waste being carried to the same outside gulley as the sink pipe, all properly trapped. The bath was covered with a door or lid hinged to the wall so that, when the bath was not required for bathing purposes, it was let down and formed a seat or table for the washing-tub or tray The front of the bath was open, so that it could be kept clean, and a wood-slatted mat was placed underneath between the feet, and could be drawn out when required for bathing or any other purpose. Describing the result of the actual tests, the author said the stopcock was turned on, copper filled, range fire lighted, airtight door placed in position, the horizontal damper lifted. The heat from the range then passed through the flue at back and circulated round the flue of the copper, from thence up the chimney, and in less than forty minutes the water was quite hot, although the brickwork in the copper and range was quite cold and new. The 10 gallons of water were, in fact, quite hot enough to give one a bath. The next day after the fire had been working and the cooking done and damper again opened, the water was raised to almost boiling-point in a very short time. He wished his hearers to bear in mind that this was obtained from the surplus heat, or heat that would have been passing up the back of range flues instead of, as in this case, circulating round the copper and giving the household that which was of all importance—hot water at a minimum cost.

Mr. E. Willis (Chiswick) referred to the importance of Mr. Tyndale's paper, and urged that simplicity was the main point at which they should aim in all country-house drainage. He thought they would have to come round in time to the suggestions of the Departmental Committee as to the avoidance of the intercepting trap. He was trying to get his Council to stop intercepting traps on new estates, where every house could take its due share in the ventilation of the sewer. Alderman Burridge's system seemed an excellent one, but he gave them no cost of building. He had seen a similar system adopted elsewhere with very good results.

Mr. Grace (Liverpool) pointed out that, with regard to the abolition of the intercepting trap, there were not many towns which had new estates being built, and consequently they would like to know what happened in Barrow during the transition stage. He knew a particular house on a hill which never kept a tenant because the house was doing more than its proper share in the ventilation of the sewer. From the architectural point of view he would be only too pleased to see some compulsory powers for getting rid of the intercepting traps. Provided that the copper was always covered, Mr. Burridge's system seemed to afford a cheap and convenient means of getting hot water, but there seemed also some risk of the copper not being kept clean.

Mr. Lacey (Borough Engineer, Oswestry) considered Mr. Burridge's suggestion was ingenious and practical, but it seemed to him it would be better if the supply of water to the boiler were governed by a ball valve. The stop tap might be left running, which would not only prevent the water getting hot, but would result in waste. He would like to know if Alderman Burridge had a separate flue to the boiler. The cost given of £10 without fixing seemed rather excessive, and ought to be more like £6. The position of the boiler also might have some limitation on the design of these small dwellings, but no doubt that could be got over by careful planning.

Mr. Walryn asked what would happen to Mr. Burridge's system if on the washing day when the copper was full of clothes the pressure was taken off the main. He would like Mr. Race to say whether he had any vent shaft in his sewers.

Mr. Dunkerley (Oldham) said he was interested in Mr. Burridge's statement that he had built his houses to let at 6s. a week. It seemed to him extraordinary, and he would like to know the thickness of the walls and other particulars.

Mr. Jenkin (Finchley) said he was greatly interested in the question of cottage building, but with regard to Alderman Burridge's system of getting hot water, owing to the regulations of the Water Board they could not get the water supply as described. He did not think water from the copper should be used for both laundry and culinary purposes. Another practical point was that in his experience the housewife did not care to have the copper always full. She preferred to have just sufficient water so that she need not use so much soap. He noticed that Mr. Race had no inspection chambers to any of the drains, and apparently if any stoppage occurred they would have to pull up the backyard. Further, how did he manage that the manholes in the street should act as inlets?

Mr. Race, in reply, said he admitted there would be a difficulty where a town which at present had the intercepting trap wished to change over, and he would commence by abolishing them in new estates. If in any particular part of the town there were smells from the sewers, then the sanitary authority might take a certain number of houses and alter the drainage system and do away with intercepting traps and put in ventilating shafts. In Barrow, even in the residential districts where they had detached houses, they had found no necessity for ventilating shafts; they took every precaution to see that the drains were properly laid in the first place, and his experience of thirteen years was that there was very little difficulty owing to stoppages. Inspection chambers would add to the cost of house drainage, and it was a thing he did not think they could justify with small houses. He did not say that they guaranteed their manholes in the streets to act as inlets, but he did say they had no complaints from smells. Whatever the theory might be, there was the practice.

Mr. Alderman Burridge said, of course, the cost of building depended largely on the rates of wages, and in Bedford they paid the trade union rate. They worked under the Local Government Board By-laws. They had very stringent building inspection. In fact there was no need to employ an architect, because the building inspector would do the whole of their work for them. The cottages cost about £190 each, exclusive of the land. What he had put before them was nothing theoretical, but was in actual existence. The copper could be cleaned out as easily as the kitchen range. When he put the cost at £10 he was giving a maximum figure, but it was really about £7. Whatever system they adopted they could not protect themselves against neglectful people; but as to the point about using the copper for washing and for obtaining water for other purposes, the practice was for the week's washing to be done on one day, and when that was done it was quite easy to clean the copper.

Recent Experiments in Sewage Treatment.

Mr. J. D. Watson (Birmingham) described his recent experiments in sewage treatment. He said that the protracted hot summer of 1911 emphasised a phase of sewage purification which up to that time they in this country had paid very little attention to, viz., the importance of the relationship between aerial nuisance and the aerobic decomposition of sewage. He was not sanguine enough to believe that sewage could be purified without producing some objectionable odour, but he saw no reason why such work could not be done without attracting the attention of residents in the vicinity of the works. Mr. Watson proceeded to describe a number of experiments he had made in blowing air into sewage for the elimination of sulphuretted hydrogen or the prevention of its formation. The experiments were still going on, and he felt that he was acting unwisely in speaking of them at the present stage.

Dr. Fowler (Manchester) followed with a joint paper by Professor Letts and Mr. C. Waddy on "The Foaming of Sea Water when Agitated, and its Influence on the Rate of

The Scott Memorial: Detail of Sculpture.

Re- eration." The paper was the outcome of experiments made by the authors based on the fact that sea water will foam when strongly agitated, whereas fresh water has not this tendency. Their conclusion was that there can be no question as to the effects of the foaming of sea water on the aeration, or rather re-aeration of water polluted with sewage, and that therefore storms, and in a minor degree the passage of vessels (especially paddle-wheel steamers), must have an important effect in the case of polluted estuaries or the waters in the neighbourhood of sewer outlets on the sea coast.

Self-Purification of a River.

Mr. J. Crabtree (Manchester) gave the results of his observations on a four-mile stretch of the River Mersey, near Manchester. The stream received a good deal of sewage before reaching the point under observation, and there were three sources of pollution in the four-mile stretch. The observations showed that the river regained its former state after traversing four miles. This four miles was covered in about two and a half hours, which meant that, according to the dissolved oxygen absorbed test, between four and five million gallons of sewage-derived liquor were oxidised by at most ten dilutions of river water in two and a half hours. It was to this fact and to the absence of nuisance (except that due to suspended matter) from a river classed in the Royal Commission's scale as "bad" that attention was drawn.

Considerable discussion followed the reading of the papers.

Mr. Kaye Parry (Dublin) recalled the fact that he worked with Dr. Adeney many years ago on the subject of air blowing, and Mr. Locock had also made interesting experiments on air blowing through contact beds. He was glad to see the question revived.

Mr. Prescott (Borough Engineer, Eastbourne) gave details of the good results which had occurred to the sewage of his town following the installation of an air lift.

Mr. A. J. Martin (London) contrasted the doctrinaire attitude on sewage disposal which had prevailed in this country with the experiments which had been made in Massachus tts. He considered it a disgrace that with their crowded cities a matter of such vital importance should have been allowed to drift on without the guidance to be obtained by well-considered systematic experiments and research. Whilst they were greatly indebted to those who in various districts were carrying out experiments and doing useful work, yet it was a matter which should be carried out by a Government research department.

Mr. Brodie (Borough Engineer, Blackpool) described the good results he had obtained by forcing air into a 600 yds. length of sewer.

Mr. Watson in reply, said he did not suggest that air blowing was new.

Dr. Fowler remarked that many people had blown air into sewers in various ways with somewhat disappointing results. The reason for the lack of success was that they did not know the essential conditions for bringing about a change. If they knew the right conditions in two hours they could convert the worst sewage by air blowing into an effluent better than they could get from a double contact system, but they had to know how to do it.

This concluded the first day's sitting of the section. *(To be continued.)*

CAPTAIN SCOTT MEMORIAL:

EXHIBITION OF COMPETITORS' DESIGNS.

THE sketch models for this important competition have been on view this week at the Imperial College of Science, South Kensington. Six designs were submitted and the Selection Committee unanimously decided to give Mr. Hodge's design the award. With this decision we are in hearty agreement. The remaining five are very disappointing, and show plainly how rare it is to find an English sculptor capable of designing a reasonably satisfactory monument. In one case a competitor (the names of the unsuccessful sculptors are not attached to their designs) has ventured to abandon all attempts at an architectural setting, and has boldly launched out at an imitation in Portland stone of a heap of snow and ice. On the top of this amorphous-looking mound five bronze figures, portraits of the explorers, are huddled. One is briskly stepping over the edge—why exactly we are unable to guess. The effect of this curious innovation in sculpture is distinctly unfortunate, as might have been expected. The other unsuccessful candidates take more usual lines, but their work has the one unforgivable fault of being unrelievedly dull. Mr. Hodge's work by contrast gives the impression that he was an architect—which, by the way, is the fact—and it also gives the impression that he has really thought things out and has something interesting to say about Captain Scott and his companions. The group at the top of the pylon is quite remarkably good, especially the figures of Fear and Despair, which seem to us to reach a level of excellence rarely attained by monumental sculpture in this country. The least satisfactory figure in the group is that of Immortality, which, in spite of her Assyrian-looking headdress, seems to us to be only the stock type of muscular young female who appears as Britannia on all the bad sculpture with which this unhappy country is so plentifully dowered.

It was a happy thought on Mr. Hodge's part not to give us a life-size figure of Captain Scott, but to rest content with medallion profiles of the five who so heroically perished in the cause of knowledge. We confess we never could see why memorials to the illustrious dead should necessarily consist of full-length figures, and we are grateful for the omission in this case.

The modern frock-coat is difficult enough to treat decoratively, but it must be child's play to the thick and formless wrappings which conceal Arctic explorers. This is probably the reason why the relief panels round the podium are not quite as interesting as the rest of the work. They represent various incidents of the expedition, but the figures, at any rate on the small scale of the sketch model, are not very expressive, and the compositions, except in the case of the one entitled "To find," are not very original or attractive. But these matters are at most only details, and we can congratulate the sculptor on having produced a design of quite unusual merit.

SUGGESTIONS TO ASSESSORS.

A VERY interesting document was picked up on Friday on the banks of the Thames, about a mile below Greenwich. It is entitled, as far as can be made out, "Suggestions to Assessors," and as it seems to throw light on assessors' methods we publish it in the interests of our readers:—

SUGGESTIONS * * ASSESS * *
PRIVATE * * CONFIDENTIAL.

1. The perfect assessor must have many qualifications for his office; he may, in fact, be said to be born and not made. He should have the weight of an elephant in manner and the agility of a ballet-dancer in fact.

2. It may, however, be stated that he need have no special knowledge of planning or of design, but he must possess a deep insight into the weaknesses of humanity.

3. He must also remember that our greatest poet has very wisely remarked, "Assume a virtue if you have it not," and so he should not prevent the Committee with whom he has to deal from forming the impression that he possesses those qualities which they naturally would assume were requisite.

4. In dealing with a Committee he should speak as one having authority, being at the same time careful to state nothing that can in any way afford the Committee an opportunity of judging as to whether he has the knowledge with which it is disposed to credit him.

5. In laying down conditions of competition, which is one of the tasks for which he is paid, he will do well to save himself unnecessary trouble. Some official of the public body he is acting for will have drawn up a list of requirements, which will have been sent to him, and which, after a reasonable delay of a few weeks, he can get one of his assistants to copy out in a fair round hand, changing a word here and there and specifying the colours with which the plans are to be tinted. He may also add from a standard document such clauses as the following:—

(*a*) Designs which are not submitted will be excluded from the competition.

(*b*) Drawings must not be inked in in invisible ink.

(*c*) Any designs which are not placed in a convenient position for the assessor's comfort will be disqualified.

A number of these clauses give the promoters an idea that they are dealing with an expert, while they are readily copied by his assistants from other documents.

6. The assessor will greatly lighten his task and also impress the public body if he sends down his office-boy to see the drawings unpacked and to ascertain that there are no snakes or scorpions or suffragettes concealed in the packages. The office-boy should mark every drawing with a chalk number as received, and should make inquiries as to the best hotel in the town, acquainting the assessor with the knowledge so acquired.

7. The assessor should then travel down first-class and, having dined and slept at his hotel, should engage a motor-car to take him to the hall where the drawings are exhibited.

(Clauses 6 and 7 are modified when the assessor pays his own expenses.)

8. Having arrived at the hall, he should look at such of the drawings as are conveniently

placed for his inspection, and, having found a comfortable armchair and a novel, he should proceed to make himself at home. *N.B.*—No assessor should allow any official or person concerned to remain in the room while he makes his examination of the drawings.

9 The time an assessor spends in preparing his award should vary in the ratio of the square of the fee he obtains thereby and his judgment as to the cube of the credulity of the public body concerned. In the case of a stay of some days he will doubtless find some amusement or meet with persons of interest who will help him to pass the time while the subject soaks into his understanding.

10. There is, however, a time for all things, and the assessor, having thoroughly mastered the name of the subject of the competition, will look round the room and cast the numbers into a hat, distinguishing such drawings as are accessible. He will, after a due pause, draw a number out of the hat, which will be the number of the design placed first. A similar method will determine the numbers of the designs placed second and third.

11. The assessor will then return first-class to his home, and after a delay of a week will give his award as follows:—

Having given exhaustive consideration to the designs submitted for my judgment, I award the premiums as follows:—

First premium, No. 4.
Second premium, No. 7.
Third premium, No. 9.

P.S.—I may say I could not have judged that the undertaking would have worn down my strength as it has done, and shall be obliged if your Corporation will double my fees.

12. There may be complaints as to the nature of the award, but this can be dealt with in one of the following ways:—

(*a*) Disregard complaints altogether.

(*b*) Talk about professional loyalty and *esprit de corps*.

(*c*) Reference to natural complaints of disappointed competitors.

(*d*) Refer modestly to your own position in the profession.

(*e*) Do not, under any circumstances, discuss or explain the points raised, as this would show weakness, while requiring knowledge.

At this point the document is badly damaged and torn, and the remaining clauses cannot be deciphered, but on one of its pages is a curious device consisting of two beasts playing hide-and-seek round a column, and perhaps some of our readers may be able to inform us what this means.

ARCHITECTURAL SOCIETIES.

Nottingham and Derby Architectural Society.

A party of nineteen members of this Society held their annual excursion on Thursday, July 9, travelling to London, thence by motor char-à-banc to the Hampstead Garden Suburb. The principal buildings, the church, chapel etc., were inspected under the guidance of Mr. Raymond Unwin, F.R.I.B.A. Lunch was partaken at the club-house on the estate, and afterwards the party motored to Hampton Court, where Mr. A. W. S. Cross, F.R.I.B.A., Vice-President of the R.I.B.A., took charge of the party and conducted them through the State-rooms, Great Hall, etc. After tea on the riverside the gardens and the great vine, planted in 1764, were visited.

BOOKS.

How to Frame a House. By OWEN B. MAGINNIS. (New York: The William T. Comstock Company. Price $1.50.)

THIS is a very practical treatise on the methods of framing timber in wooden houses and brick buildings. It is illustrated by over 150 drawings, which are clearly drawn and so explicit that they convey the information intended for the practical man without assuming that the reader has had a scientific training. The fact that the work has reached its seventh edition speaks well for the way in which it has been received. Owing to the extensive and increasing use of more fire-resisting and lasting materials during the past few years there is not such a wide field for the use of timber, and consequently the number of readers must be somewhat limited. The subjects dealt with by the author include floors and roofs generally and rustic carpentry and joinery.

A decidedly interesting portion of the volume is that devoted to the description of "How to Move a House," and, although this is an operation seldom attempted in this country, the matter is worth reading. The author wisely states that it is simply out of the question to try to move a heavy brick house resting on piles or grillage in a mud bottom, and the notes apply chiefly to wooden structures. Practical information for carpenters is given in the last chapter, and this contains many useful hints, and the whole book is clearly written, and obviously the work of a writer who is thoroughly qualified in his subject.

Working Drawings of Machinery. By WALTER H. JAMES and MALCOLM MACKENZIE. (New York: John Wiley & Sons Inc. London: Chapman & Hall.)

THIS text-book almost solely concerns mechanical engineers, and is an excellent treatise on draughtsmanship from that point of view. The idea of looking upon a working drawing as a business letter from one man to another is distinctly good, and this is the keynote throughout the volume. The chapter on parallel perspective and isometric drawing is excellent, though all too brief. The application of the former method to setting out a hot-water radiator installation on several floors is set forth and illustrated, and should commend itself to all architects who take the trouble to go into such matters in detail.

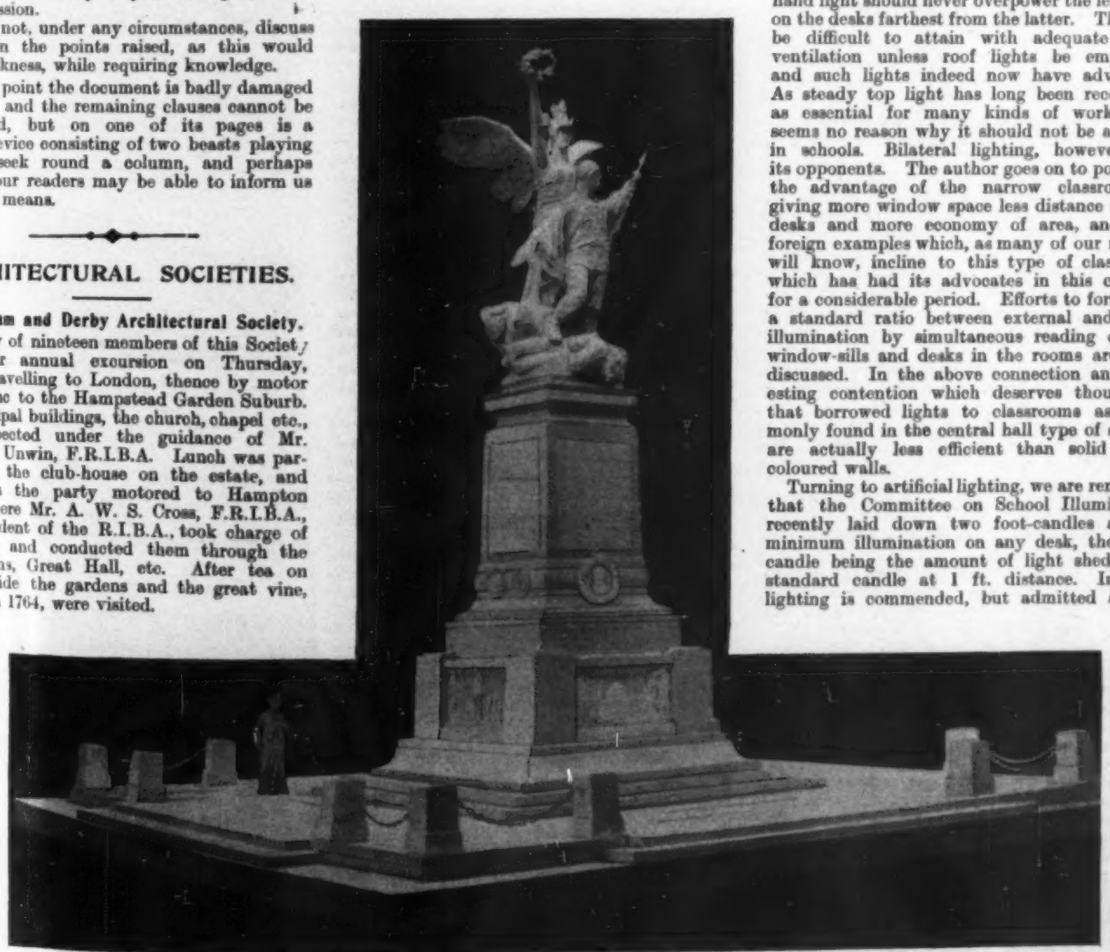
The illustrations are excellent examples of the craft taught, as well as of first-class American engineering practice, and the advice to set up as many sheets of drawing-paper on boards at the start as will carry the job through, and to work out all views concurrently, is thoroughly sound where the exigencies of office space permit.

School Lighting. By E. H. T. NASH. 9¼ in. by 6 in.; 28 pp. 1s. net. (Churchill. 1914.)

THIS is a paper read before the Medical Officers of Schools Association last autumn, and largely illustrated by plans from W. H. Webb's "School Planning."

Dr. Nash's opinion of professional design may be gathered from the phrase, "The architect who as a rule knows little or nothing about illumination . . .," and, although he might have tempered the criticism by adding that he and his colleagues are not agreed upon the essential principles of school lighting, yet it is to be feared that there are many who are not conversant with the law of inverse squares or the meaning of the term, "foot-candle," as all progressive architects should be. The author begins by pointing out that glass to floor ratio demanded in schools in this country is much less than in many others, and anyone who has attempted to much increase this proportion of window in a well-planned classroom knows that this involves the question of bilateral lighting. This is becoming the usual thing in the modern type of school, but we commend the author's dictum that the right-hand light should never overpower the left, even on the desks farthest from the latter. This may be difficult to attain with adequate cross-ventilation unless roof lights be employed, and such lights indeed now have advocates. As steady top light has long been recognised as essential for many kinds of work there seems no reason why it should not be adopted in schools. Bilateral lighting, however, has its opponents. The author goes on to point out the advantage of the narrow classroom as giving more window space less distance to wall desks and more economy of area, and cites foreign examples which, as many of our readers will know, incline to this type of classroom, which has had its advocates in this country for a considerable period. Efforts to formulate a standard ratio between external and room illumination by simultaneous reading on the window-sills and desks in the rooms are next discussed. In the above connection an interesting contention which deserves thought is that borrowed lights to classrooms as commonly found in the central hall type of schools are actually less efficient than solid light-coloured walls.

Turning to artificial lighting, we are reminded that the Committee on School Illumination recently laid down two foot-candles as the minimum illumination on any desk, the foot-candle being the amount of light shed by a standard candle at 1 ft. distance. Indirect lighting is commended, but admitted as too



Model of the Accepted Design for the Scott Memorial.

Mr. A. Hodge, Sculptor.

expensive. Blackboard lighting was, it is pointed out, recommended by the Committee at 60 per cent. above that for desks. The avoidance of glare—that is, direct reflection of the light in place of illumination of objects—is referred to, and any of our readers who have had recent dealings either as students or teachers with blackboards will admit that they are generally most inefficiently illuminated. The best way to deal with a blackboard is to place a concealed strip of light near the top, shedding rays almost vertically down the board.

The whole subject of school lighting is an important topic, and we recommend our readers who have responsibilities in this matter to follow the developments of investigations in progress.

The Making of High Roads. By A. E. CAREY, M.Inst.C.E. (London: Crosby Lockwood & Son. 1914. 84 pp.)

THIS little book is based upon a lecture delivered at the School of Military Engineering, Chatham, and, although so large a subject cannot be treated with any approach to completeness in a small volume, the author has succeeded in giving a really excellent survey of road-making practice in a minimum number of pages. One noteworthy feature is the adequate attention paid to the latest modern developments in relation to road foundations and surfaces, and the work of the Road Board. The book is concluded by a series of seven appendices, containing useful information as to materials, specifications, and recent bibliography of road engineering. It is one which we have pleasure in commending to the notice of our readers.

BOOK RECEIVED.

THE LAW OF BUILDING, ENGINEERING, AND SHIP BUILDING CONTRACTS. Vols. I. and II. (London: Sweet & Maxwell, Ltd. £3 3s. each.)

CORRESPONDENCE.

What's Wrong with Architectural Expression?

SIR,—One well-known writer asks, "What's wrong with the world?" and it seems to be the growing custom now to ask what is wrong with everything, hence the heading of this letter.

In the first place, please allow me to thank you heartily and sincerely for the kind expressions contained in your leading article of the 10th inst., especially as your views are so entirely different from mine. In reply to your comments, I would like to say that, in my opinion, Ilkeston is really not a new style. Ilkeston contains the post, the lintel, and the arch, as buildings of old did, but they are expressed differently, just as in the present day we do not use a new language, but nevertheless express ourselves differently from the speech of Queen Elizabeth's time.

Again, I do not agree with you that Ilkeston is to be regarded as a sample of the "Art Nouveau." I always regard "Art Nouveau" as a conglomeration of contortions, very similar to the contortions of a small boy after a surfeit of unripe fruit. There are no such contortions in Ilkeston; in fact, Ilkeston goes to the other extreme.

Now let us see where we are at the present day, and to this end I would like to make three series of comments heading them "The Past," "The Present," and "The Future."

The Past.

So far as the past is concerned, we know that architecture had a continuous development of expression in this country for a considerable time, and that the zenith of expression was reached somewhere about the year 1300. Of course, beautiful expression did not cease then, but a distinct change came. What was the cause of the change? English people do not as a rule care to be logical, and they regard the Renaissance as a period of great zeal for learning. They also regard the Reformation as a period of great zeal for religion. It is plain that these two were secondary causes and that the primary cause was economic. Facts came first, theories afterwards. The economic question began to arise in intensity just at the time when architecture reached its zenith, and was due to the rise of the merchant class. Then came along the development of trade and the worship of wealth for wealth's sake, also usury. The Renaissance in its primary stage was due to no love for learning as such, but was brought about because the merchant class found that knowledge meant more money. Much the same with the Reformation; the Church was rich, and therefore something to be plundered. Moreover, the conditions of employment obtaining at a monastery, which did not need to work for profit, jarred very greatly upon the merchant class. Thus we see that the downfall of architecture coincided with the love of wealth for wealth's sake. In your article you ask why I have not followed traditional lines. May I point out that when wealth had got everything its own way in the Renaissance and the Reformation, tradition was broken and classic forms were brought over and forced upon people who were used to a different style? Here was a complete break with tradition, and from that day onward architecture fell rapidly and buildings became very drab and dismal until we reached the Victorian period, when humanity seemed to be unable to stand it any longer.

The Present.

Humanity in its revulsion of feeling wanted something better, and to many men (and good men, too) the only thing seemed to be to hark back to the Middle Ages, and so we had a Gothic revival. Since then we have had nothing else but harking back, and we seem to have harked back to every known style under the sun, not only in this country, but all over the world, and certain it is that no civilisation in the world's history can show such a medley of buildings as this country of ours, especially London. The harking back has not even finished yet, and there seems to be a tendency to revive the abominations of the Late Georgian and Early Victorian period. Not long ago I was in a small cathedral city, and on arrival found all the hotels full. I was recommended to a private residence, and very glad I was, for it was a residence built and furnished in the Early Victorian period. It gave me one of the most uncomfortable week-ends I have ever spent, and I came away thanking a merciful Heaven that we had got beyond that. How men of the present day can wish to revive these abominations I cannot understand.

In Ilkeston everything has been kept as simple and severe as possible, with one exception, and that is in the matter of colour. Unfortunately, the photographs do not show the mass of colour which obtains throughout the whole school. It is here that I have tried to bridge over the last 400 years and in a measure get back something of the spirit of the Middle Ages. The wood columns in the covered ways to which you refer are coloured a deep rich blue and are picked out with bright green, yellow, and red, after the manner of the two surviving pieces of art that have come down to us, namely, canal barges and caravans. The hall and classrooms are also painted and stencilled in a variety of bright colours, and it seems to me that it is along the line of simple treatment and bright colours that the future lies.

The Future.

Can it be that in architecture we are not to do the same as in language and express ourselves in the terms of the day? What would be thought of a business man in the City, on the Stock Exchange, if you will, using the speech of Queen Elizabeth? He would be treated either as a practical joker or a lunatic. But are not we architects doing something very similar? New methods of construction and new materials have come along. Are we not to take advantage of these and try to make them express themselves naturally? There is an old French proverb which seems to sum up all our difficulties: "*La jeunesse vit d'espérance, la vieillesse de souvenir.*" Is it not a fact that the spirit of architecture requires rejuvenating? It has got to the stage when it can do nothing but live on the past, and that is a sure sign of senile decay. But architecture is like the Phœnix, and there is no reason at all why it should not rise from its ashes and step forward again buoyant with hope. If I may make a suggestion, it is this, that *I think the Royal Institute would be doing far more good to the profession as a whole and to humanity in general if it would devote a certain amount of time to calling together the best men in the land to consider the possibilities of expressing architecture in modern terms and giving our art a new vitality.*

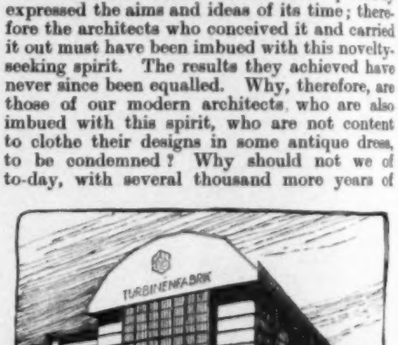
In conclusion, let me thank you once again for your kindness and courtesy. I hope you will be able to find room for this letter in your next issue, and I am sure we should both be glad to hear the views of other architects in the country as to whether a new expression in architecture is possible and desirable, and whether some practical means cannot be found for giving expression to that expression.

GEORGE H. WIDDOWS.

County Offices, Derby.

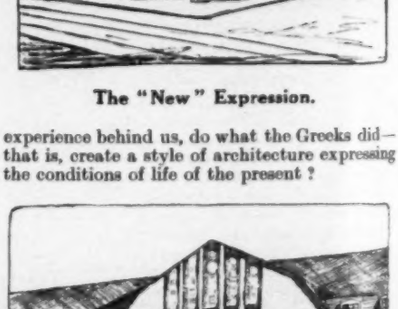
"The Means of Architectural Expression": A Reply.

SIR,—Throughout the ages human nature has remained essentially the same, and will doubtless continue the same. One of the most marked characteristics of human nature has always been a desire for something newer, something better, and this desire has been the most potent factor in the progress of civilisation. The ancient Athenians sought novelty even as do many modern architects. It is admitted that ancient Greek architecture perfectly expressed the aims and ideas of its time; therefore the architects who conceived it and carried it out must have been imbued with this novelty-seeking spirit. The results they achieved have never since been equalled. Why, therefore, are those of our modern architects, who are also imbued with this spirit, who are not content to clothe their designs in some antique dress, to be condemned? Why should not we of to-day, with several thousand more years of



The "New" Expression.

experience behind us, do what the Greeks did—that is, create a style of architecture expressing the conditions of life of the present?



The "New" Expression.

The conditions of life change from age to age, and with them architecture. Is it therefore logical to try to express the conditions of

The "New" Expression.

present in the terms of the past, to fix on the past style and say, "Let this be our model, never to be departed from"? Will our successors in the year A.D. 3000 be content with our choice of a model?

In Wren's time they solved their problems in the ways that seemed best to them and with the best materials they could get. We have a far wider range of materials and methods than Wren had, and therefore to express our designs in the way that Wren did is deliberately to cramp them. If we take the fullest advantage of our materials and methods and then mask them with the details of Wren's time we are not "building in truth"; we are merely producing hybrids.

No doubt the work of each great master has its lesson for us, is bound to influence our work, but the lesson is not to be learnt by measuring details and then reproducing them in our own work.

This method has been followed long enough and has failed. Even the most academically inclined of our architects cannot altogether resist this novelty-seeking spirit; they must tinker with the detail of the master they follow and try to improve upon it, and so, unless their genius is equal to his, the result is failure.

The present is a time of antiquarian affectation. There exists in this country particularly a "craze" for the antique, for old paintings, old furniture, and old buildings. This "craze" came in at the time of the Gothic revival, and has since spread until it embraces almost all periods and styles. It is still fostered by architects as much as by anyone, so that it is bound to show itself in their work. If only they would design something less antique their work would be far more appreciated by the public who follow them in their love for anything old.

Already there are signs of the decay and death of this "craze" in this country in such buildings as Mr. Widdows' school at Ilkeston, in France, in the new Theatre des Champs Elysées, in Paris, for example. It is true that much time and trouble is saved by rendering a design in a "Georgian" manner and for those who prefer saving time and trouble to doing real hard work this is doubtless enough. Designing in a Georgian manner, or indeed in the manner of any "period" or "style," has become reduced to a formula for which one has merely to refer to books. Almost all the joy of creation is lost in designing according to a formula (one cannot imagine Brangwyn forcing himself to paint in the style of Fragonard and enjoying it). Critics of this will say:—"Look at our architectural schools, where the students are trained on Classic principles! Is there not plenty of the 'joy of creation' there?" No, there is not much joy, and what there is is the joy of making pretty drawings. It is possible to extract great pleasure from making a pretty drawing of a Chinese pagoda, but to design one on true Chinese principles would be a heartbreaking task even for a student of Chinese archæology.

Architecture is at present at the stage at which motor-cars were when they were still made to resemble as far as possible horse-drawn carriages. The motor-car has passed from this stage and is now, at its best, a thing of beauty. Each separate part fulfils its appointed function in the simplest way, without any useless ornament. In the same way, when architecture has discarded its old trappings it will be a thing of beauty.

W. J. PALMER JONES.

The R.I.B.A. Meeting of June 29.

SIR,—I am sure all members of the R.I.B.A. must be grateful to you for calling attention to the point of order raised at the above meeting. There is no doubt that By-law 39 has been broken. Let us consider the facts. A notice was sent in the usual way to every member of the R.I.B.A., and the letter sent on the late President's authority was simply an urgent "whip" to selected men asking them to attend and vote for a certain policy. Now let us examine By-law 39, which is as follows (the italics are mine):—

"*No notices or other documents* other than those necessary for the usual conduct of the business of the Institute *shall be issued* to the various classes of members and Licentiates, save those directed to be so issued by the Charter or By-laws or by Resolution of the Council, except that in case of emergency the President shall have power to *issue any notice* he may think fit, provided that he report his action at the next meeting of the Council."

It will be seen that, although the President has power in a case of emergency to issue a notice, he has no power in a case of emergency to issue any "other documents."

Whether the meeting was unconstitutional or not I do not know, but it seems absurd to have a by-law that may be broken and nothing happen; if so, why have the by-law?

NO POLITICS.

The R.I.B.A. Charter.

SIR,—Your attention will no doubt have been drawn to a circular which has evidently been sent to all Licentiates of the Institute during the past week. This circular has been authorised by a group of Licentiates who have formed themselves into a Committee ostensibly for the purpose of petitioning the R.I.B.A. Council, and, "if necessary," the Privy Council, with regard to Clause 2 of the proposed new charter. An analysis of this circular will surely be interesting to the profession generally.

It is alleged that the clause mentioned would operate unfairly to the Licentiates as a class; the particular grievance being that they, along with other architects (whose names will be admitted to the register at a later date) will be styled "registered architects," whereas Fellows and Associates (who are corporate members), the greater number of whom have qualified by examination, will be termed "chartered architects." It is also claimed that the "status" of Licentiates will be affected and "their identity lost" owing to the fact that other registered architects will be enrolled after the charter comes into operation. Having this in view, one pauses to see the nature of their appeal, which amounts to nothing less than a demand that *no distinction* should be made between the Licentiate and Associate classes. The personal efforts, work, and expense entailed by those who have sought to qualify for admission to the Institute by examination shall be all to no purpose and of no avail. This body of Licentiates evidently does not recognise any claims of merit, but by some train of reasoning would seek equal distinction for which they have "toiled not," etc.

It should be borne in mind that the petition does not take the form of a suggestion that all other architects enrolled after the charter has been passed should be separately classed, although this is stated to be the ground of complaint. This appears to be far from the minds of the petitioners, as no mention of this is found in the circular. One can well imagine the feelings of those members of the Institute who have been successful in working their way patiently through the various examinations at this attempt to obtain—through a combination of circumstances—what has hitherto been reserved for those who have cared to work for what has been considered to be the best distinction in architecture.

It will be noted that the two signatories to the circular have thought fit to qualify in engineering and surveying (being members of the Institution of Civil Engineers and Surveyors' Institution respectively), but not in architecture.

It would be interesting to know how they would view an attempt by professional men outside these institutions to gain admission to the same and then appeal to be given the same status as themselves. Such a proceeding would be exactly on all-fours with the effort they are now engineering.

The appeal cannot be said to be in accord with the British spirit of fair play, and it is to be hoped that little support will be found for such an unworthy petition, which will no doubt receive the scant respect which it deserves at the hands of the R.I.B.A. Council.

FIVE ASSOCIATES.

St. Paul's Bridge.

SIR,—I quite agree with what you say in the concluding paragraphs in your leading article of the 3rd inst. The proposed bridge is indeed superfluous, and nothing would be more practically illustrative of the fact than if, as already suggested in your columns, an opening were made through scheduled property in the line of the approach to the bridge, between St. Paul's Churchyard and Queen Victoria-street.

There a short street (temporary maybe) could be formed between those two thoroughfares as a north to south and west communication. Ludgate-hill and New Bridge-street would be relieved, and never more would there be a desire to close up the opening by a bridge.

A saving of a million or more would be effected, yet no one in a responsible position has appeared to hold up even a little finger, although, as you are aware, Mr. Editor, a protest was made in the proper quarters.

O. B. I. T.

The Disposition of Doors.

SIR,—On inspecting the ground plan of the second premiated design for the Concrete Cottage Competition, as given in your valuable journal, I notice the door, opening from the porch to the living-room, "K.P.," is shown as being hung on the right jamb. The consequence of this would be that, should the door be pushed back too far at any time, it might come in contact with a person or child, should one be coming from the adjoining bedroom at the time.

The door in question should in this case be hung on the left jamb of the opening. The general rule is that room doors should be hung to hide the interior during the process of opening. It would be an improvement to place the door opening in the centre of the main wall to the porch.

These remarks apply to both cottages

A. SOUTH.

GENERAL NEWS.

The Royal Institute of British Architects *v.* the Architectural Association.

The annual cricket match between the Royal Institute of British Architects and the Architectural Association will take place on Wednesday, July 22, at the A.A. ground, Elstree. We are asked to request any members of the R.I.B.A. who would like to play to communicate with Mr. N. W. Hadwen, 22, Buckingham-street, Adelphi, W.C.

Memorial to Mr. Norman Shaw.

A memorial to Mr. Richard Norman Shaw, R.A., was unveiled on Monday by the Earl of Plymouth at New Scotland Yard. The medallion, which is of bronze gilt, is placed in the centre of the river front of the building, under the middle balcony of the third floor. A portrait head of Mr. Shaw, to the scale of a 10-ft. figure, occupies the centre, the head being surrounded by an oak-leaf wreath. The medallion was designed by Professor Lethaby and modelled by Mr. Hamo Thornycroft. Lord Plymouth said that Mr. Shaw played a very strong part during the latter end of the nineteenth century not only in the buildings he had left to us, but also in the influence he exercised upon those who were working in the architectural profession. He would not be misunderstood if he described Mr. Shaw's work as examples of the aristocracy of architecture.

Proposed Subways under Oxford-Street.

In our last issue we announced that an application had been made to the Westminster City Council by Messrs. Selfridge & Co., Ltd., for consent to the construction of two subways under Oxford-street. The subways, having a diameter of 22 ft., and consisting of two stories, are contemplated as a means of communication between the company's present buildings with the proposed extension to Orchard-street, on the north side of the street, and the buildings on the south side, between Lumley and Balderton streets, occupied by Messrs. Thrupp & Maberly. These premises were erected for that firm after designs by the late Mr. H. S. Legg and Mr. Arthur Kinder, and were enlarged about ten years ago by Mr. K. P. Kennedy.

Sale of Early Georgian Fittings.

At Messrs. Knight, Frank, & Rutley's recent sale of early Georgian fittings in the old residences in Argyll-place, by order of the Westminster City Council, the carved panelling to walls on the first floor of No. 6 realised 54 guineas; a massive chimneypiece, white marble, inlaid with Irish green, 41 guineas; a similar lot, 40 guineas; a carved wood mantelpiece, with marble slips and iron grate, in No. 7, Argyll-place, £50; three six-panelled doors, with carved mouldings and Georgian door-heads, £53; a white marble mantelpiece, with carved frieze and caryatide jambs, £168; a white marble mantelpiece, with carved frieze, inlaid with green marble, with open grate, 70 guineas; five six-panelled doors, with carved egg-and-tongue mouldings and architraves, and three overdoors, 43 guineas; five panelled shutter linings, with carved mouldings and architraves, £27.

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ILLUSTRATIONS.

British School at Rome.

THESE illustrations are referred to in our second article this week, p. 61, where other designs will be found.

St. Cuthbert's Church, Copnor, Portsmouth.

THIS church, of which illustrations appear of the interior and exterior, is being erected under the auspices of the "Portsmouth Six Churches Fund," although almost the entire amount of the contract sum has been contributed by a single individual, Mr. Heath Harrison. The church is to accommodate 814 persons, 572 in pews in the nave, 100 in the Lady Chapel, and the remaining 142 in chairs in the nave and aisles.

The key plan on the exterior view shows the arrangement of the church. It is divided into three compartments, each 36 ft. square, separated by wide coupled arches springing from the main piers. The compartments are covered internally with plaster domes constructed on expanded metal lathing and steel ribs, like the ribs of an umbrella. Two compartments form the nave, and the third forms the chancel. Beyond is a semi-octagonal apse, and on one side is the Lady Chapel separated by an arcade and metal grille, and on the other side a chancel aisle, with vestries opening out of it, and an organ loft over the chancel aisle. A continuous aisle, 6 ft. 6 in. wide, runs round the two sides and end of the nave, and there are five entrances directly into the church. The font stands in the centre of the first compartment of the nave.

The church is built of local stock bricks of varying colour, with bands and dressings of thin red bricks. The internal columns are of Portland stone, the internal strings of Ham Hill stone; the external stonework is all of Doulting. The roofing tiles are large "Roman" tiles, and the dome of the tower is to be covered with copper. The pews will be of oak, and the chancel screen and panelling to sanctuary will be of dull polished walnut. The contract sum, exclusive of fittings, was £10,983.

The following are some of the principal dimensions:—Length of nave, 113 ft.; length of chancel and sanctuary, 60 ft.; total length of church internally, 173 ft.; width of nave and chancel, 36 ft.; width of aisles, 6 ft. 6 in.; total width of church internally, 54 ft.; height to springing of main arches and domes, 26 ft.; height to intrados of arches, 42 ft. 6 in.; height to crown of domes, 51 ft. 6 in.; height of tower, 88 ft.

The general contractor is Mr. S. Salter, of Southsea; the heating engineers, Messrs. Dargue, Griffiths, & Co., of Liverpool; the steel casements, Messrs. Wainwright & Waring, of Wandsworth; tiling by Messrs. A. W. Allard & Co., of Clapham Junction. The architect is Mr. F. Stanley Hall, M.A., A.R.I.B.A., of 54, Bedford-square, W.C.

Work of Thomas Bellamy.

THESE illustrations are given in connection with an article which appears on p. 68 in our current issue.

Tomb of the Duc de Brézé, Rouen.

THIS monument is in the extreme east end of Rouen Cathedral. It was erected to the Duc de Brézé, Grand Seneschal of Normandy. The nobleman is seen *en cadavre* on the sarcophagus below, and above on his war-horse, arrayed for battle. The figure within the columns to the right is the Madonna (with the child) The figure to the left is believed to represent Diane de Poictiers. The design of the whole and the execution of the figures are credited to Jean Goujon, and are quite worthy of him. A. C. C.

La Belle Cheminee, Fontsinebleau.

THIS chimney-piece was restored and made up from fragments of a former cheminée which adorned a private theatre at Versailles in the time of King Louis XV. It was designed by Matthieu Jacquet. The figures are attributed to Francqueville, a Fleming. The bust in the centre represents Henri Quatre. The restoration was by direction of King Louis Philippe, who had his monogram, Lp, placed on the lower part.

This detail should have been more visible in the sketch. A. C. C.

MEETING.

FRIDAY, JULY 17.

The Architectural Association.—Annual prize-giving and exhibition of work by students in the Architectural School of Architecture. 2.30 p.m.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Viscount Peel, Chairman, presiding.

Tenders.—The following tenders were received:—For painting work at the Wornington-road School, Kensington, N.; for the supply of electrically-driven chassis for the London Fire Brigade; for the supply, etc., of rotary converters and static transformers for the tramways department; for the enlargement of the Newington gas-meter testing-station; for providing and fixing heating apparatus at the Newington gas-meter testing-station.

Loans.—The Finance Committee recommend that loans be made to public bodies as follows:—£9,000 to the Poplar Borough Council for repaving works; £20,295 to the Woolwich Borough Council for paving works.

Fire Stations—Sliding Poles, Drill Towers, etc.—The Fire Brigade Committee recommend that an iron drill tower be erected in the yard, an exit provided from the staircase to the yard, and a separate entrance formed from Downham-road, at the Kingsland Fire Station; that sliding poles be installed and an iron hose hoist and drill tower erected in the yard at the Mile End Fire Station; that sliding poles be installed and an iron hose tower erected at the Shepherd's Bush Fire Station; that expenditure on maintenance account not exceeding £910, in respect of these works, be sanctioned; that the building works be executed by the appropriate contractors under the jobbing schedule; and that the necessary electrical works be executed, at a cost not exceeding £60, by direct employment of labour under the direction of the Fire Brigade Committee.

Parliament Hill—Concrete Wall.—The Parks and Small Holdings and Allotments Committee recommend that a concrete wall be provided round the sides of No. 3 pond at Parliament Hill as soon as the Council has approved the necessary estimate and voted the expenditure therefor.

New Sessions House.—The Local Government Committee recommend that the tender of Messrs. W. E. Blake, Ltd., amounting to £98,980, should be accepted for the erection of the New Sessions House at Clerkenwell. Tenders had been invited from selected firms, and Mr. G. Dew, in moving that the recommendation be referred back, said that every firm on the list had locked out their men, and he suggested that instructions should be given to the Committee to arrange for inviting fresh tenders from firms who had not locked out their workmen. This motion was seconded, and was still under discussion when the Council passed to the consideration of unopposed business.

COMPETITION NEWS.

It must be understood that the following paragraphs are printed as news, and not as advertisements; and that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

The list of current Competitions is printed on page 85.

Barnsley Town Hall.

The Town Hall Committee of the Barnsley County Borough Council have received the award of Mr. H. T. Buckland, of Birmingham (the assessor), relative to the competitive plans sent in by architects for the proposed new Barnsley Town Hall. The result is as follows:—First (£100), Mr. P. H. Topham, Manchester; second (£50), Mr. C. Laidlaw, Edinburgh; third (£25), Messrs. Clough & Morrell, Chelsea.

Area Planning, Bradford.

The Negotiating Sub-Committee of the Street Improvement and Buildings Committee of the Bradford City Council has adopted a resolution to the effect that competitive designs for planning the central area should be invited; that three premiums be offered of £500, £300, and £200; and that conditions and particulars for the guidance of competitors be drawn up by the Town Clerk and the City Engineer.

Australia's Federal Parliament House.

The Australian Government announces an international architectural competition for the purpose of selecting the architect of the Parliament House, and possibly, incidentally, an additional architect for other Government structures of the new Federal capital city, Canberra. Only tentative outline sketch designs for the building are requested, and eight prizes are offered aggregating £6,000, the first being £2,000, in addition to commission for service at the scale of the Royal Institute of British Architects. The designs may be submitted in either Melbourne or London by the end of March, and will be judged by the following jury of architects, whose decision will be final:—

George T. Poole, of Australia;
John J. Burnet, of London;
Victor Laloux, of Paris;
Otto Wagner, of Vienna.
Louis H. Sullivan, of Chicago.

The programme will be issued to any practising architect on application to the High Commissioner for Australia in London, or any British Ambassador to whom copies are being forwarded. The importance of this event is not to be measured by that of the foremost building of the Commonwealth, but by the opportunity to establish an architectural standard, not only for the future seat of Government in Australia, but for a great new democracy of scope, scale, and modern advantages, as well as of climatic conditions differing radically from any prototype in Europe or elsewhere.

FIFTY YEARS AGO.

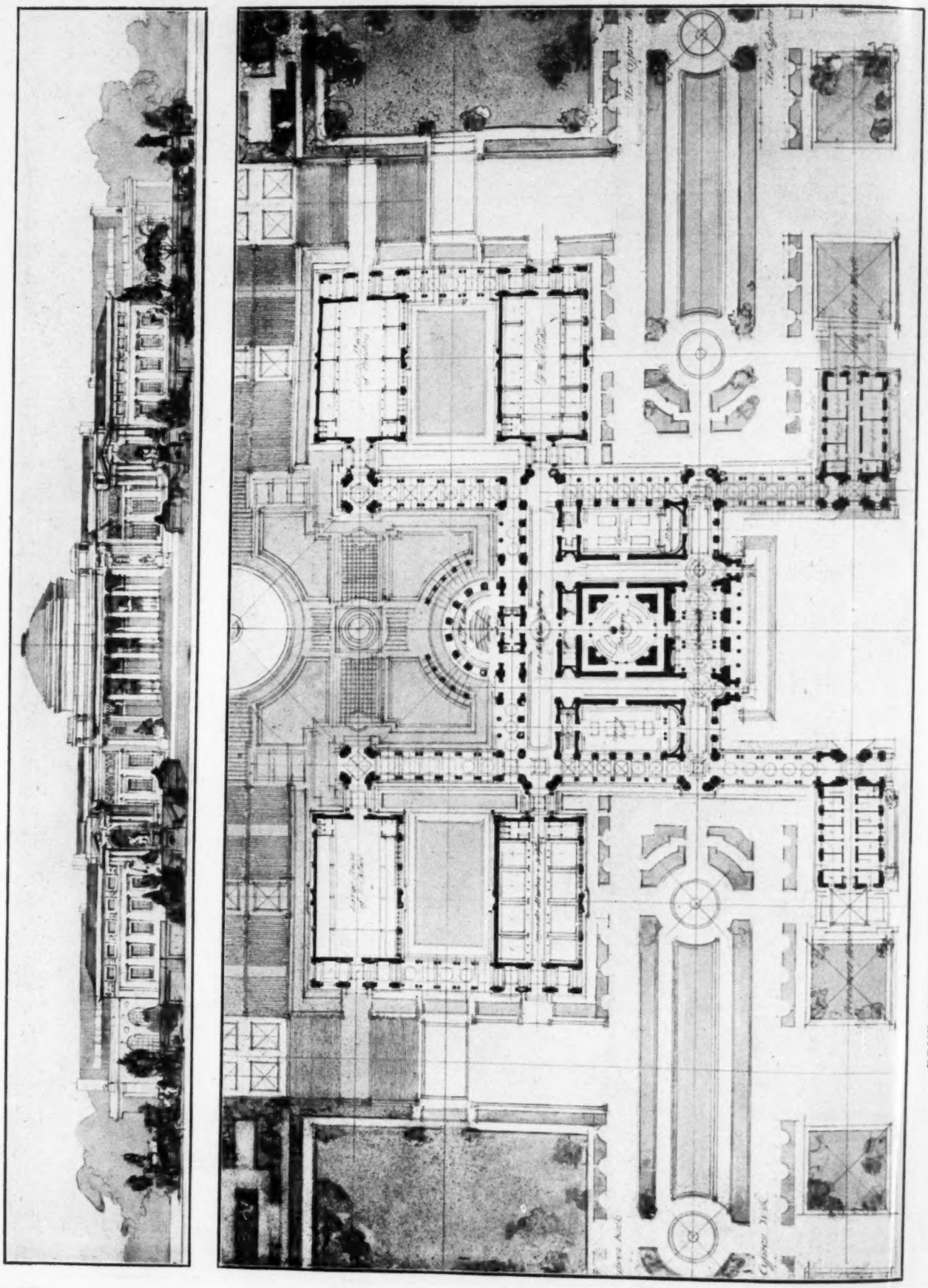
The Sad Story of the *Great Eastern* Steamship.

THE *Great Eastern* steamship, which, but four years since was the wonder of the day, was sold in February last at public auction for £25,000, scarcely one-third of its value as old materials.

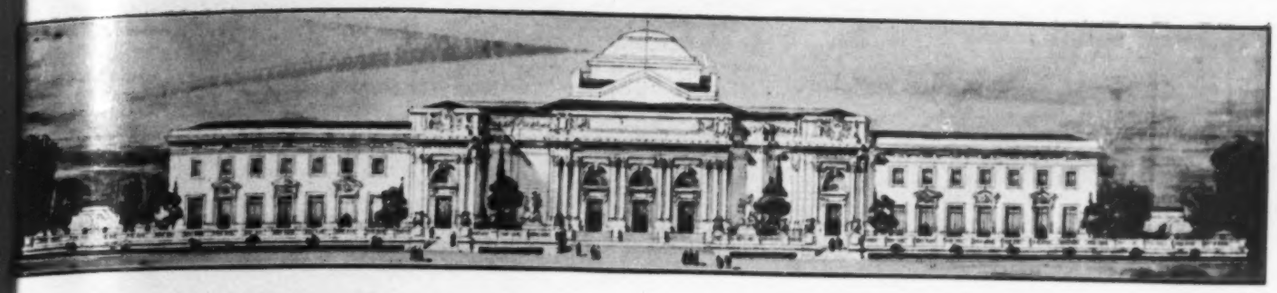
This is another instance, added to many, of great expectations disappointed, of genius wasted, and of enterprise thwarted. It is the last act in the history of one of our first limited liability companies, and I hope you will agree with me that it may be useful to record some of the principal facts which appear to have led to this lamentable termination of an enterprise which promised the greatest results.

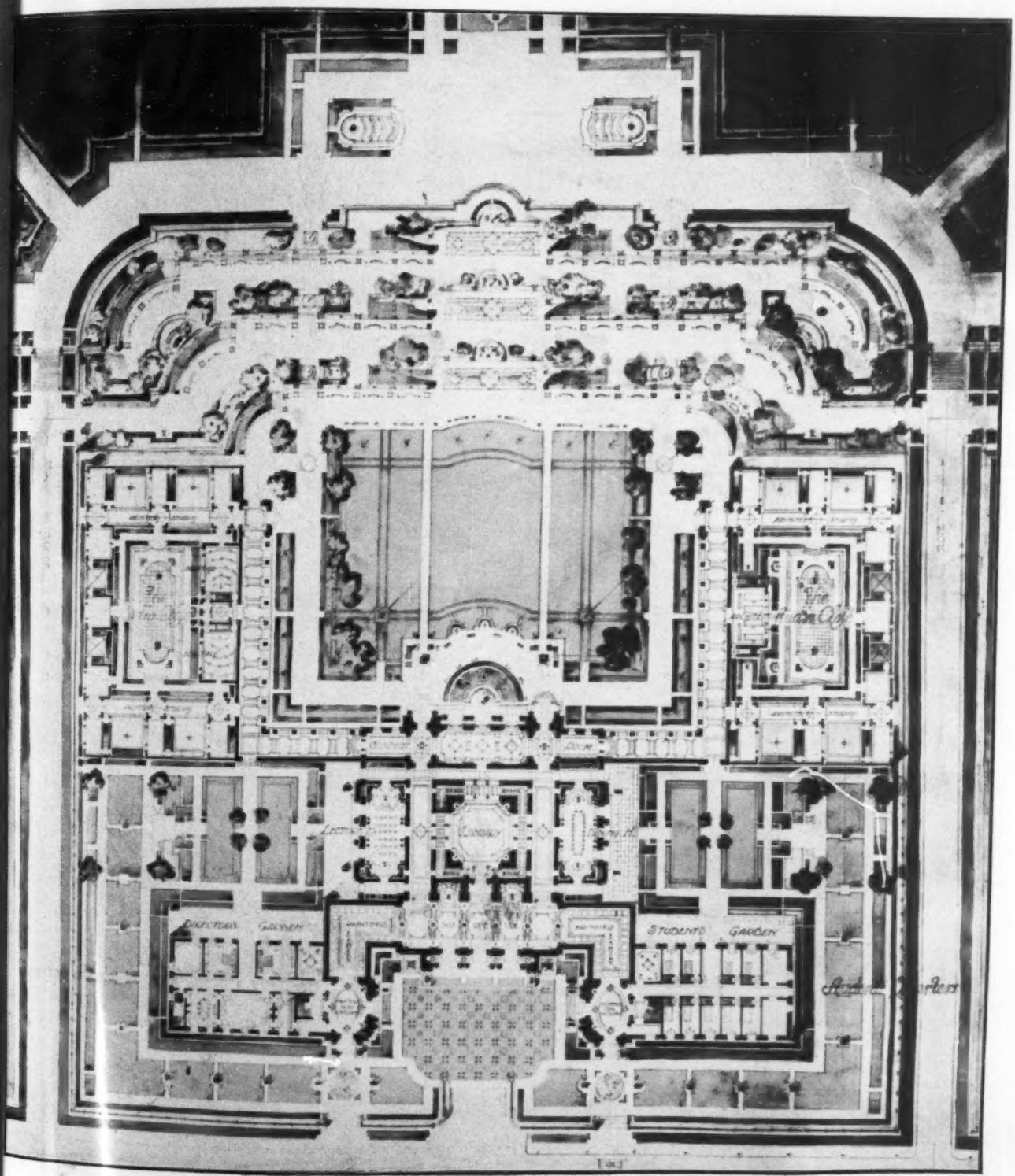
This ship originally belonged to the Eastern Steam Navigation Company—a Company established to carry the Indian and China mails by the long sea route, the political advantages of which the directors hoped would have induced the Government to give them a mail contract on favourable terms. In this they were disappointed; the influence of the Peninsular and Oriental Company was too strong for them. But they were not disheartened, and immediately turned their attention to the consideration of the question whether ships could be built and profitably worked to carry mails and passengers as quickly and more cheaply than by the overland route without the aid of a Government subsidy. The result of their inquiries led to the construction of the *Great Eastern*, the particulars of which were first announced in a Report presented to an extraordinary general meeting of the Company, held on July 12, 1852.

[*** We give the above extract from the *Builder* of July 16, 1864.—ED.]



ROME SCHOLARSHIP IN ARCHITECTURE, 1914: WINNING DESIGN, BY MR. PHILIP D. HEPWORTH.

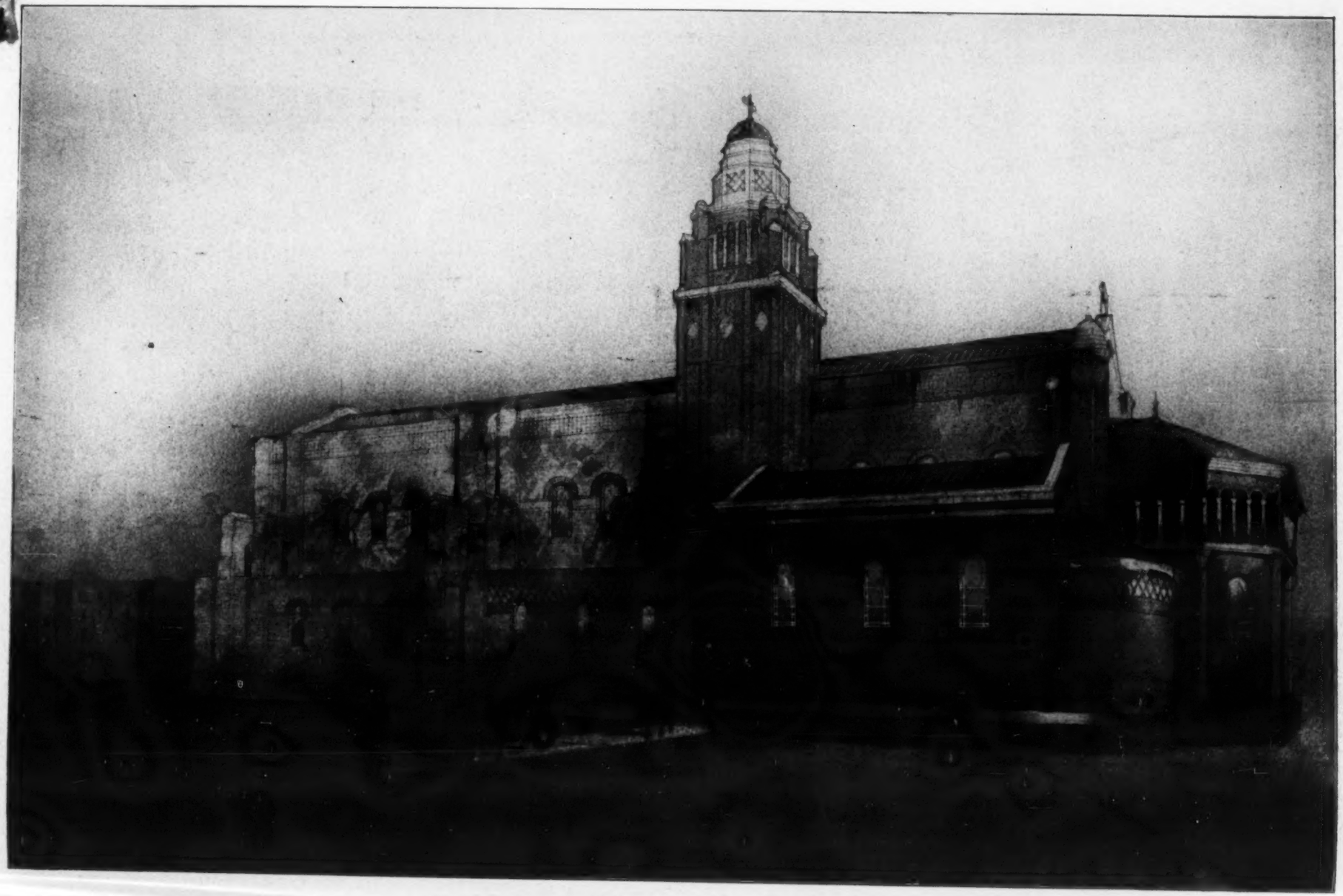




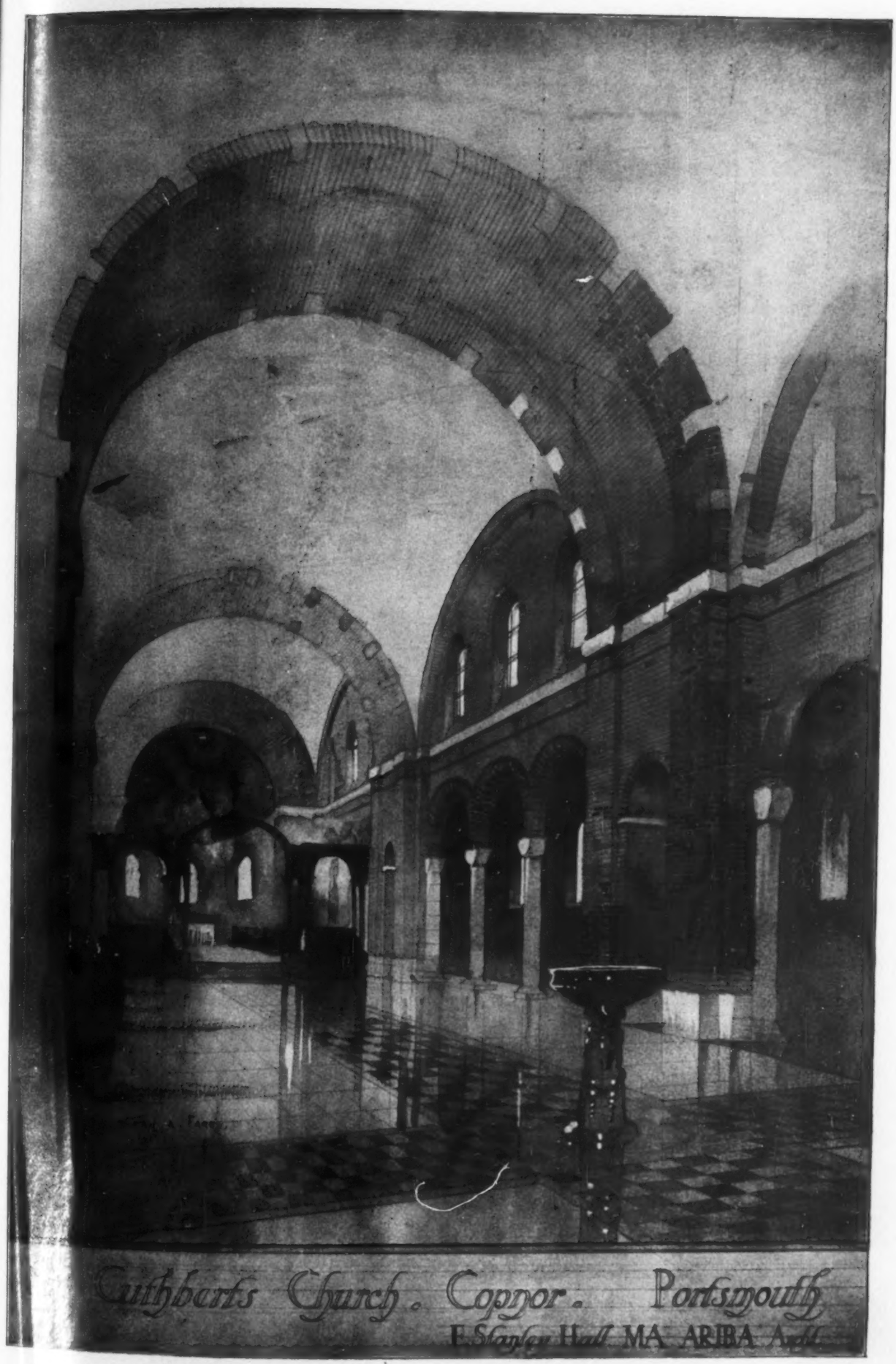
ROME SCHOLARSHIP IN ARCHITECTURE, 1914: MR. ERNEST CORMIER'S DESIGN.

(AWARDED THE JARVIS STUDENTSHIP.)

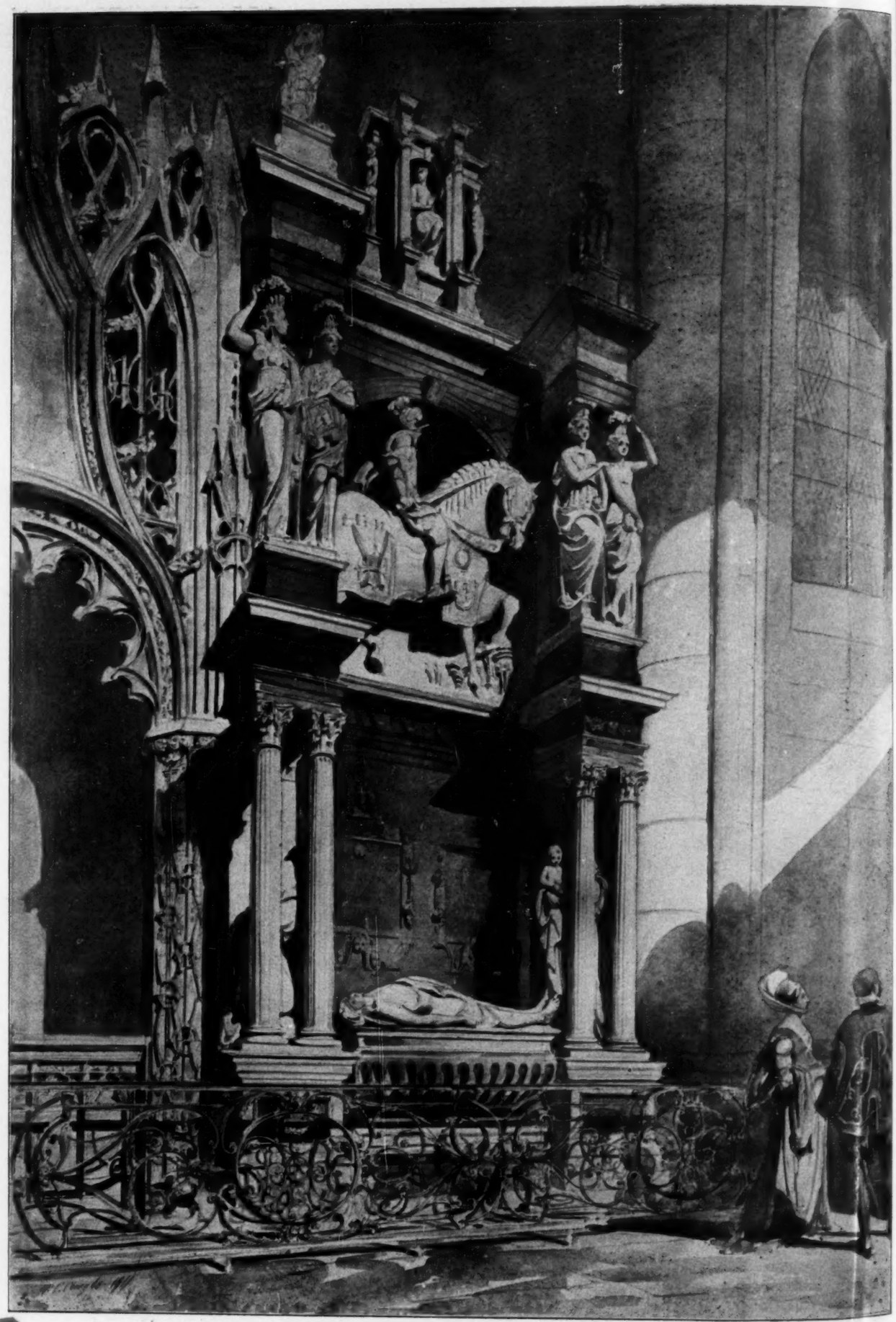
ROME SCHOLARSHIP IN ARCHITECTURE, 1914: WINNING DESIGN, BY MR. PHILIP D. HEPWORTH.



ST. CUTHBERT'S CHURCH, COPNOR, PORTSMOUTH.—Mr. E. Stanley Hall, M.A., A.R.I.B.A., Architect.

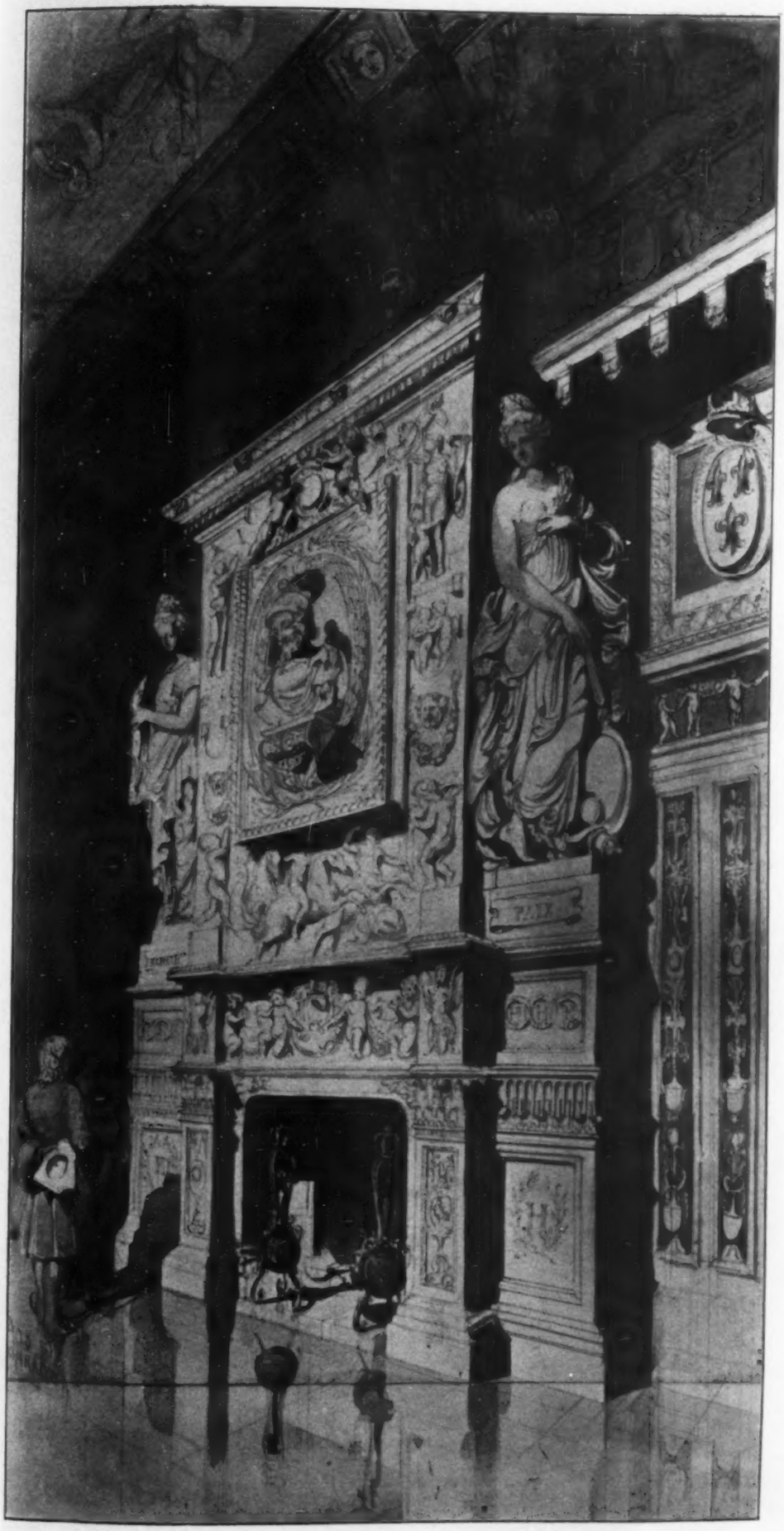


ST. CUTHBERT'S CHURCH, COPNOR, PORTSMOUTH.—MR. E. STANLEY HALL, M.A., A.R.I.B.A., ARCHITECT.



TOMB OF THE DUC DE BRÉZÉ, ROUEN.

(From a Drawing by Mr. A. C. Conrade.)



FONTAINEBLEAU: LA BELLE CHEMINÉE.

(From a Drawing by Mr. A. C. Conrade.)

CONSTRUCTION SECTION.

WESTMINSTER HALL ROOF.

THE fine hammer-beam roof of Westminster Hall has been thoroughly examined during the last twelve months, and this examination has revealed many and serious defects which threaten the collapse of the whole or part of the structure, and, as this roof is the earliest known example of the hammer-beam type the importance of taking immediate steps for its preservation cannot be over-estimated.

The results of the examination, together with the suggestions for a system of reinforcement, have been published in the form of a Report to the First Commissioner of Works by Mr. F. Baines, M.V.O., one of the principal Architects in H.M. Office of Works, and the Report contains a great deal of information of importance and interest. The notes cover the historical evidence relating to the Hall and roof, the defects and their causes, the theoretical principles of the construction, and proposals with regard to the work now suggested, and several drawings and photographs are attached to the text to render it more explicit.

The Hall itself dates from the year 1097, and the original walls remain to the present day, though much refaced and altered. The width between these walls is 67 ft. 6 in., and it is practically certain that the original roof was carried by intermediate supports of some kind, as the span is very large for this early date, and from the spacing of the original buttresses, which still remain, the trusses were placed only 20 ft. apart. The present roof was decided upon in 1394, and it appears to have been completed about the year 1399; thus it has been in existence for over 500 years, and, although many minor repairs have been executed from time to time during that period, no serious attempt has been made to prevent the decay of the timbers and keep the structure in a sound condition.

The present examination was decided upon when the care of Westminster Hall passed into the hands of the Ancient Monuments Branch in March, 1912, and a light scaffolding was erected in order to examine the work in a systematic manner.

There are thirteen trusses in all, and eight of these were selected for various reasons, the full height of the roof, a distance of over 90 ft., being scaffolded in two sections, and arrangements were made for portable electric hand lamps in the various stages, and patent extincteurs were provided on each stage for use in case of fire. The causes of the defective condition of the timber were found to be as follows:—(1) Dry rot; (2) incipient surface decay; (3) decay due to the attacks of the Xestobium tessellatum (one of the Anobiid beetles); (4) decay due to the attacks of a smaller Anobiid beetle; (5) the ravages of the goat moth.

There is no doubt that the roof is at present in great need of ventilation, and in the case of new timber being inserted dry rot is almost certain to take place unless the ventilation is greatly improved. With regard to the incipient surface decay, it is interesting to note that the wood has assumed a wonderful rich golden-brown tone, which is a distinctive feature of the roof where the original timbers are still in position. This colour is so effective and distinctive that it is suggested that no form of preservation should be adopted which would impair it, and this is certainly a commendable suggestion. The chief cause of the decay is undoubtedly that mentioned in No. 3 above, viz., the ravages of the Xestobium tessellatum. This particular species is rarely found in other wood than oak, and the speed with which they progress in their work of destruction is almost incredible.

To deal with this damaging factor some stringent measures are necessary, and a great number of insecticides have been considered in relation to the different conditions imposed by the problem. It is suggested that a liquid which could be applied with the brush is the only suitable way of treating the timber, but, although eighteen liquids have been experimented with, no real solution seems to have been arrived at up to the present. It is necessary to use something which will penetrate well into the wood whilst causing no discoloration, and while being a perfect insecticide it must not be a volatile poison, smell offensively, or be inflammable. In the laboratory experiments, conducted under conditions as nearly as possible resembling those which would be met with in practice, better results were obtained with sulphur dioxide than with any other insecticide. This substance can be obtained readily both in the liquid and gaseous state, and is inexpensive. It is not inflammable, and its use, with the observance of ordinary precautions, would be unattended with danger to workmen. Moreover, it does not affect the colour of the oak, and in the opinion of the most eminent experts would have no injurious effect on the strength of the wood, and the conclusion arrived at was that fumigation with sulphur dioxide offered the only method of chemical treatment which would entirely rid the timber of the grubs. A great deal of time and care have been devoted to this question, and the information presented in the Report has great value as containing the important results arrived at by eminent men during their experiments.

In the examination of the timbers one truss was carefully surveyed by outlining every member with taut wire so that the overhang of the whole truss, the twisting and eccentricity of each member, the drop of the hammer-beam, and the bending of the principals could be accurately measured and recorded. Some idea of the decay in portions of the timber can be gathered from the photographs illustrated in Figs. 1 and 2, and these views may be taken as typical.

The Report contains a detailed statement of the result of the examination with regard to all the members, and the reading of this section should be sufficient to convince anyone of the seriousness of the defects which threaten the stability of the structure. In order that the nature of the stresses which exist may be fully realised and the functions of the various members understood, a section of the Report is devoted to the theoretical development and design of the hammer-beam truss, and stress diagrams have been prepared for one truss of the Westminster Hall roof. The loads considered were the dead load of the old truss, the weight of the proposed steel reinforcement, and a wind pressure of 25 lb. per square foot normal to the roof slope. This is probably the only authoritative stress diagram that has ever been prepared for this roof, and it is therefore of interest, although several assumptions had necessarily to be made in the preparation of the diagrams. It is shown by a comparison between the stress diagram and the stresses, as observed in the structure itself, that there is a wide difference between them, and in practically every member the amount and nature of the stress as given in the diagram is not borne out by an examination of the work itself.

The question of piecing up the existing timbers with modern oak was dealt with, but, considering that the cubic content of oak from which the whole of the roof timbers were cut amounts roughly to 40,000 cubic ft., it will be seen that this method would entail a tremendous amount of labour and material and prove very expensive. If the structure is not reinforced with steel as suggested it would be necessary to entirely renew a great number of the members and probably about 75 per cent. of the timber after restoration would be new, and thus a great deal of the historic interest

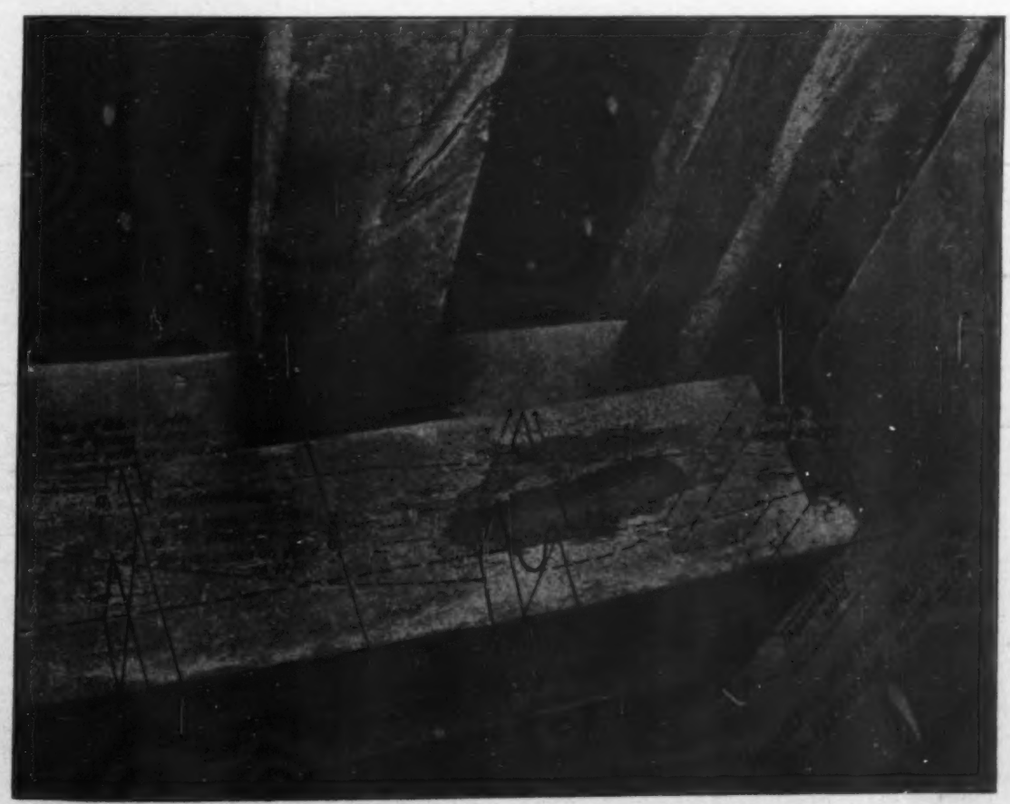


Fig. 1. Westminster Hall Roof: View showing Decayed Portions.

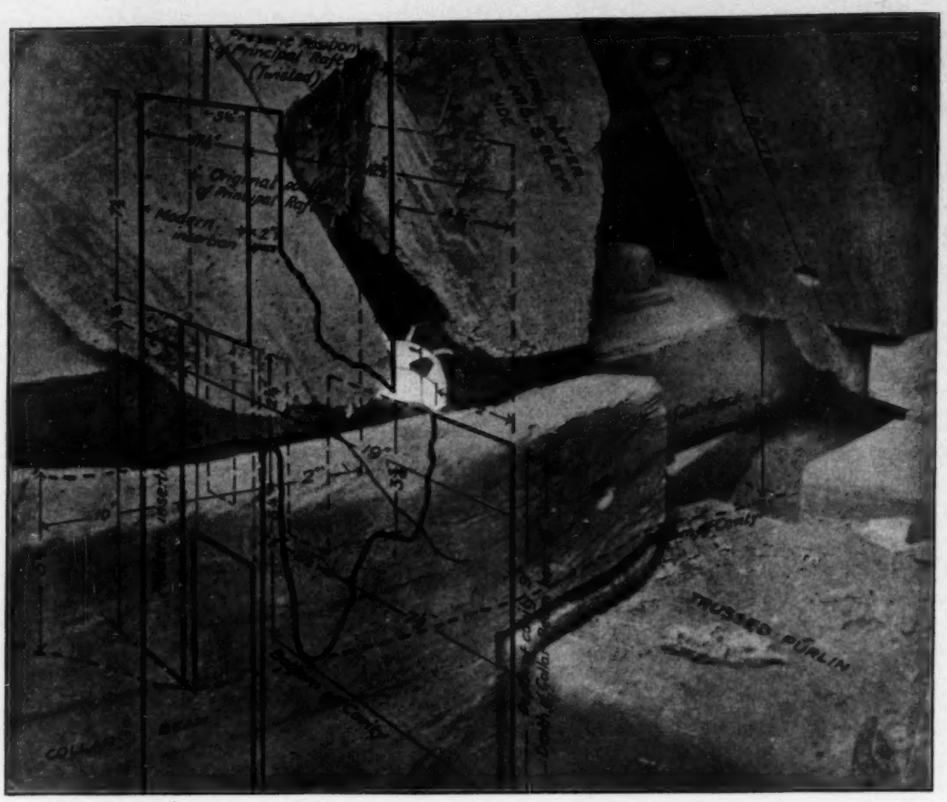


Fig. 2. Westminster Hall Roof: View of Decayed Timbers.

would be lost. The piecing should be reduced to the absolute minimum necessary to execute the work in a satisfactory manner, and this can only be done by employing some system of steel framing which will actually take the greater part or the whole of the loads.

It is suggested that the oak required can be obtained from a certain private estate in Sussex, where a great deal of timber exists, which has been felled two or three years, and the prime logs were being retained for use for special purposes. Many inquiries have been made by the English Forestry Association, and this timber seems to be the most suitable oak and meets all the requirements of the case.

The foundations and the walls of the Hall needed investigation before any additional weight was imposed, and holes were sunk by the external faces of the walls on each side of the building.

It was found in both cases that the foundations are carried down to a solid bed of alluvial, gravelly soil, and the lowest course of the footings consists of rough boulders of Kentish rag with good ballast filling between them. Generally speaking, the foundations are carried down about 12 ft. below the floor level of the Hall, and it is considered that, provided the walls are monolithic throughout, they will be well able to withstand the loads which they will be called upon to bear.

The proposals for the ventilation of the roof provide for the introduction of dormer windows in the lower part of the slope on both sides, these being fitted with louvres, and, if it is possible to obtain a drawing of the original flèche, a new flèche modelled on the lines of the original may be constructed, and this would assist in inducing a current of air to circulate in the upper portion of the structure.

The steel reinforcement that has been designed and suggested was put forward for two reasons, viz., (1) To overcome the necessity for renewing the great proportion of the main constructional and subsidiary members, and (2) to strengthen the roof, so that, even should the decay in the timbers continue as in the past, there would be no danger of complete collapse such as exists at present. The general arrangement of the proposed steelwork is shown in Fig. 3, which depicts a sectional elevation of the timber truss with the steel in position. Before the reinforcement could be inserted and the timbers pieced as required it would be necessary to provide a carefully-designed centre or supporting scaffold to carry fully every member of the trusses under treatment, and when it is considered that the approximate weight of two trusses and one bay is about 115 tons, it will be seen that the problem requires a great deal of thought and care. The type of centering suggested is illustrated in Fig. 4, and this would be built up of ordinary commercial sections and the major portion so erected that it can be rolled on wheels from one position to another. The upper part would require to be taken down and rebuilt as the positions are altered, and temporary supports put in at various points to take the loads as required. The load on the centre, together with its own weight, would be too great for the present floor slabs to carry, and it is proposed to carry the weight down to a level of about 2 ft. below the floor line on to a layer of lime concrete which exists at this point. A similar method of centering was employed in connection with the roof at the Eltham Palace Hall, and this proved satisfactory, although the conditions are not quite the same, as the Eltham roof is so much smaller and the problem was a far more simple one. The centre as at present designed is capable of supporting four trusses and three bays at one time in order to reinforce two trusses and three bays only, as it was considered dangerous to attach the reinforced purlins even temporarily to the two adjacent trusses unless these were supported.

The main points considered in the design of the steel reinforcement are:—

(1) The steelwork should be so designed as not to prejudice seriously the appearance of the truss and the general amenities of the structure.

(2) The steelwork should in itself be adequate not only to carry effectually the weight of the trusses, but to support each main member so that it can be pieced up where decayed rather than entirely removed.

(3) It should be designed so that too great a thrusting stress is not transferred to the walls.

(4) It should, when inserted, fully provide against the possibility of collapse in any of the trusses should further dangerous decay take place. The system suggested, as shown in Fig. 3, consists of a complete steel truss which follows the outlines of the principal rafters on the top and the outlines of the great arched rib on the underside and finishes at the bottom by horizontal members at the level of the wall plate.

Considerable difficulty was experienced in dealing with the junction of the upper principal rafter, queen post, and upper collar. These three members do not meet in a point, and, in order to make the error in fixing as small as possible, the steel member which follows the upper collar is placed at the top of the timber and the vertical steel ties are placed on the outsides of the queen posts instead of in their centre. This partly overcomes the difficulty, while the heavier reinforcing steel plates on the upper principal rafters are placed so that the secondary stresses may be satisfactorily resisted. In deciding on this form of truss and on the sections to be employed very careful consideration has been given to the absolute necessity for doing everything that is possible to keep the steel reinforcement out of sight, and, where this could not be done, to construct the steel reinforcement in a simple and unobtrusive form.

It has also been very necessary to give the closest attention to the question of building the reinforcement into position. The consideration of the facilities for the erection of the steel reinforcement on the site is a most important one, as a scheme might well be designed which it would be impossible to carry out without taking down a large proportion of the roof. In the present scheme, however, the work can be executed without unduly interfering with the existing timbers. It will, of course, be necessary to lift down on to the staging some of the members of the roof to allow of the introduction of the steel reinforcement. The most important of these are the collar beams and purlins. With regard to the first, many of the collar-beams are in such a dangerous condition that it would be absolutely necessary to lift one of the two timbers of this member out to repair the other, and so one would have to be removed in any case. Even if this were not so, the vast gain to the roof by getting the reinforcement to the main collar-beam out of sight by inserting it between the two timbers of this member should make this method of erection an acceptable one. As regards the purlins, these are in such an extremely defective and dangerous condition that without some scheme of reinforcement most of them would have to be renewed.

The members, therefore, which it will be necessary to take down in order to insert the reinforcement are not such as could ordinarily be allowed to remain up if the scheme of steel reinforcement were not proceeded with. So much of the roof will be left in position, and indeed must actually be retained in position, to allow the steel reinforcement to be applied, that the present proposal does in effect demand the retention of the majority of the members of the trusses undisturbed.

In providing for the insertion of this scheme of steelwork the existing reinforcing timbers and steel tie-rods, etc., can all be removed, leaving the roof in this respect almost entirely as it was originally built.

In selecting suitable sections for the truss members of the steel reinforcement, the limited space available and the necessity for keeping the steelwork as much out of sight as possible have been very fully considered. The result is that the steelwork, which includes forged rods, heavy turned pins, large gusset pieces cut to very irregular sizes, etc., is not at all of a simple nature, and in the working out of the details a vast amount of calculation and consideration will have to be given to the designing of the connections. The complicated and costly nature of the steelwork, however, has had to be faced to meet the difficult and unusual conditions imposed by the problem. Whenever bolts are necessary in the jointing of the steel truss they will have to be of best turned steel.

In order to keep the section of the members which act as struts to neat and unobtrusive proportions, particularly in the case of the

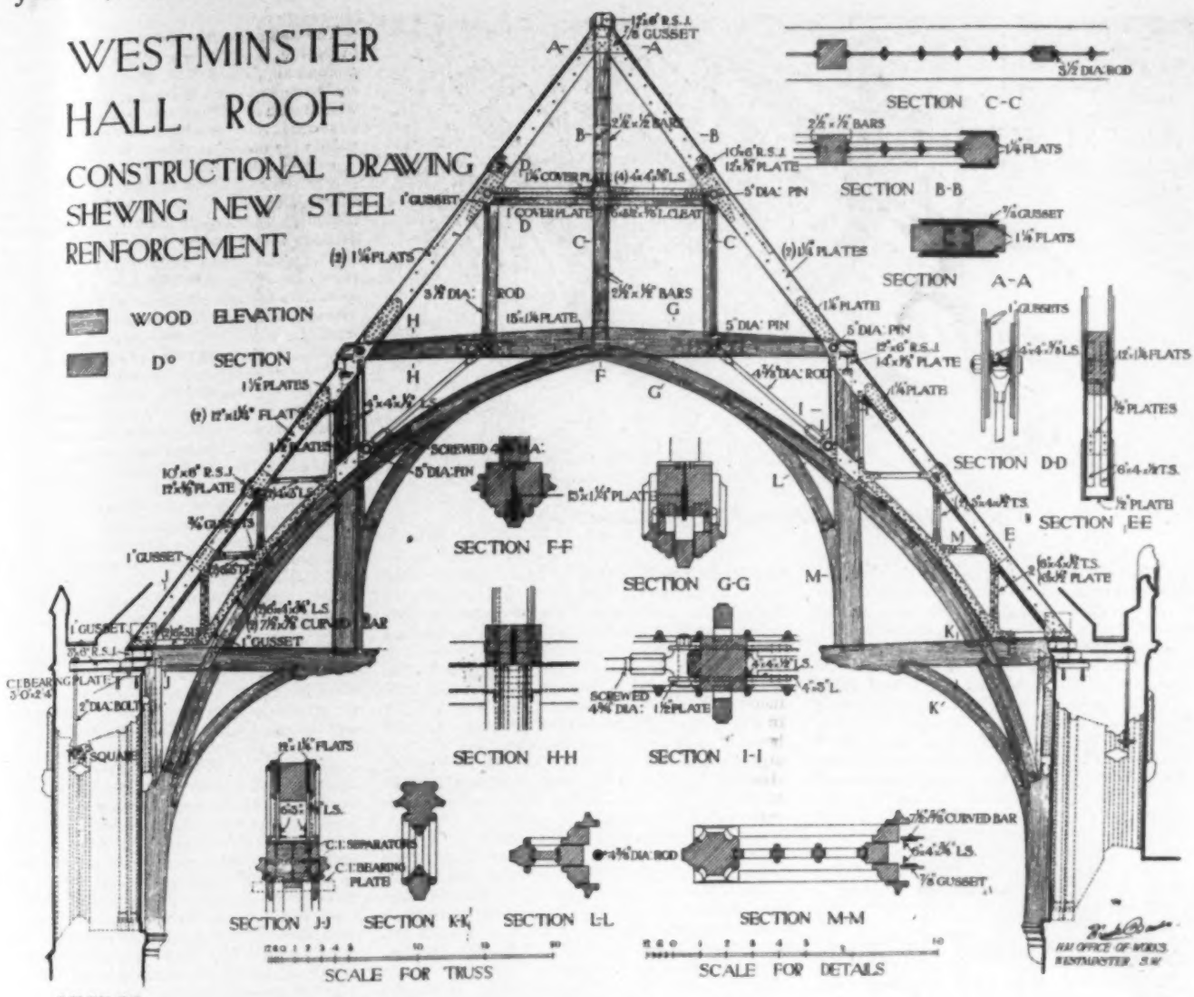


Fig 3.

principal rafters, it was necessary to calculate the timber as a bracing which would prevent the buckling of the steel plates. Thus these plates on each side of the principal rafters will be bolted together through the thickness of the timber, and every portion of hollow and decayed wood must be made good by new pieces of oak. These must be secured, not by simple butt jointing, but by good scarfing joints, so that the timber itself will hold the steel reinforcing plates rigidly in their relative positions. This condition being attained, the steel alone will then be fully capable of resisting the compression without any further assistance from the timber.

In all the bearings, in order to bring the load well on to the walls and not upon their edges, a steel girder has been introduced, held

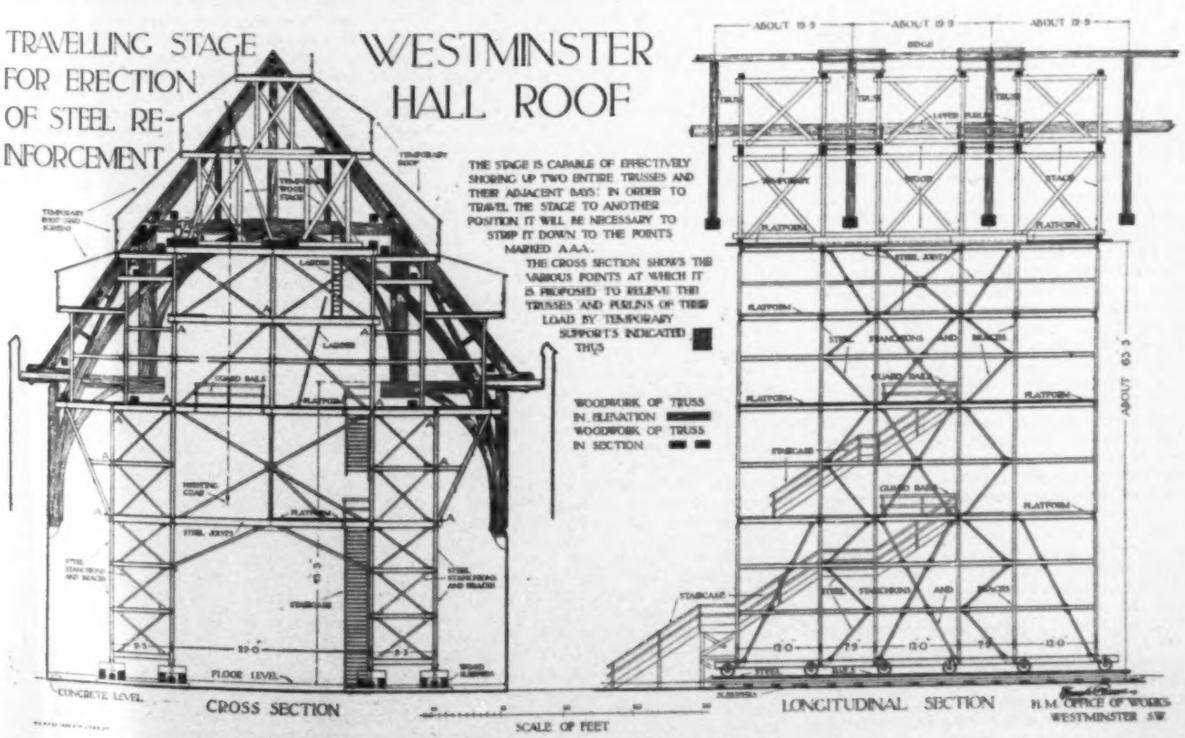

TRAVELLING STAGE
FOR ERECTION
OF STEEL RE-
INFORCEMENT
WESTMINSTER
HALL ROOF
THE STAGE IS CAPABLE OF EFFECTIVELY SHORING UP TWO ENTIRE TRUSSES AND THEIR ADJACENT BAYS: IN ORDER TO TRAVEL THE STAGE TO ANOTHER POSITION IT WILL BE NECESSARY TO STRIP IT DOWN TO THE POINTS MARKED A.A.A.
THE CROSS SECTION SHOWS THE VARIOUS POINTS AT WHICH IT IS PROPOSED TO RELIEVE THE TRUSSES AND PURLINS OF THEIR LOAD BY TEMPORARY SUPPORTS INDICATED THUS
WOODWORK OF TRUSS IN ELEVATION
WOODWORK OF TRUSS IN SECTION
CROSS SECTION
LONGITUDINAL SECTION
SCALE OF FEET
H.M. OFFICE OF WORKS
WESTMINSTER S.W.

Fig. 4.

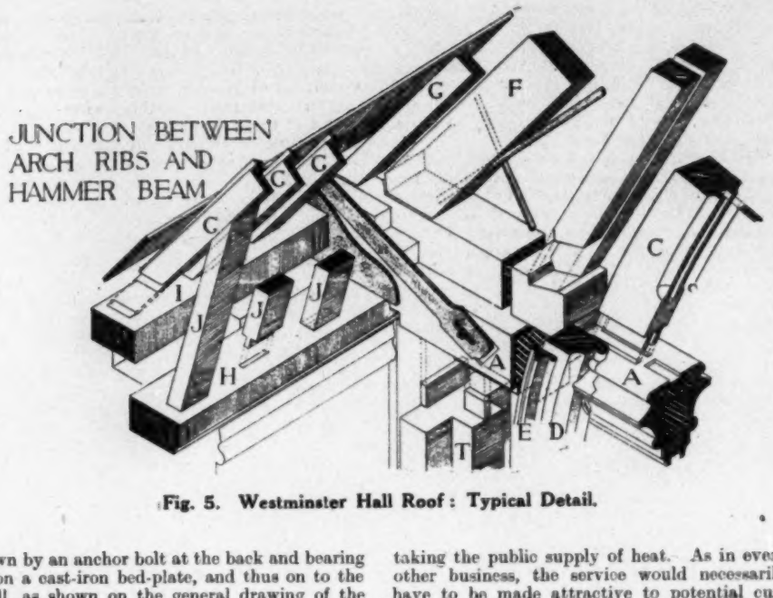


Fig. 5. Westminster Hall Roof: Typical Detail.

down by an anchor bolt at the back and bearing upon a cast-iron bed-plate, and thus on to the wall, as shown on the general drawing of the steelwork.

The total weight of one complete bay of reinforcement—*i.e.*, taking a truss and its purlins, bed-plates, and all purlin and ridge reinforcement—will work out approximately at 27 tons of steel.

The estimated cost of the whole of the work is £60,015. The Report indicates that the whole roof has been thoroughly and efficiently examined, and the question of preservation has been carefully considered from all points, and the system proposed should prove satisfactory and be the means of retaining what is an interesting and valuable example of ancient work well worth the estimated expenditure.

CENTRAL STATION HEATING.

For many years local authorities and public companies have been actively engaged in the distribution of public supplies of water, gas, and electricity, but no attempt has been made so far to adopt the central station system for the supply of heat to entire towns or districts.

Some of our readers may think perhaps that public supplies of heat by the medium of steam or hot water would be quite impracticable. The inaccuracy of any such conclusion, however, is sufficiently demonstrated by the fact that central steam heating for towns has been successfully conducted for more than thirty years in the United States, and that central station hot-water supply systems have been operated in the same country for about twenty years.

In the United Kingdom central heating systems have been established on a relatively small scale for the supply of steam or hot water to the various blocks of hospitals, workhouses, and public institutions generally, and to the separate buildings of large industrial establishments. Installations of the kind differ only in degree from the larger installations common in the United States, and the satisfactory results attained are sufficient to justify inquiry into the claims of central station heating on an extended scale.

The chief objection to be urged against the commercial success of the system is that it would entail the cost of substituting radiators for open fireplaces or stoves in the buildings occupied by many prospective consumers. It must be remembered that the same kind of difficulty had to be encountered and overcome when public supplies of water, gas, and electricity were first introduced, and has still to be dealt with in the present day to a modified extent.

In manufacturing and commercial districts many buildings are already fitted with radiators and heating pipes, and these could readily be connected with the new source of heat. As for buildings not so provided with radiators and pipe systems, the supply authority could probably arrange to facilitate matters by undertaking the installation of the requisite fittings on terms similar to those offered by gas and electricity authorities and companies. This is merely one of the various points that would have to be considered by those undertaking the public supply of heat. As in every other business, the service would necessarily have to be made attractive to potential customers as well as satisfactory to customers already secured.

That these conditions can be complied with is fairly established by the continued and increasing adoption of central station heating in the United States, where so many central heating plants are now in operation that an organisation termed the National District Heating Association has recently been formed to promote the interests of this branch of the engineering profession.

The importance of the system is further shown by the fact that in one of their *Bulletins* the United States Bureau of Mines give details concerning the operation of no fewer than fifty-seven central heating installations in different parts of the country. A comparison of the prices charged by the central stations with the cost of fuel for an ordinary house-heating boiler shows that in many cases the cost of generating heat privately is equal to the amount payable to the central station. It must be remembered, further, that the customer saves the trouble of supervising the operation of heating plant and the inconvenience attending the delivery of fuel and the removal of ashes. A somewhat curious fact is that central station heating systems are most numerous in states where coal is relatively cheap, thus indicating reasons other than economy in fuel cost for the popularity of the service.

One of the strongest arguments in favour of central heating is reduction of the smoke nuisance. Domestic fires, stoves, and boilers unavoidably create large volumes of smoke unless anthracite coal is used, the price of this variety being almost prohibitive for most households and business concerns. On the other hand, the almost perfect combustion possible in a well-designed steam-boiler plant permits the volume of smoke emitted from the chimney to be reduced to inconsiderable proportions.

The consumer derives advantage in various ways apart from any saving in the cost of heat. By avoiding the periodical delivery of coal and the removal of ashes a good deal of dust and dirt is abolished from the premises. The same result is attained, and at the same time a good deal of labour is saved, by a system of heating that does not entail such operations as the lighting and maintenance of fires, clearing out ashes, and the upkeep of equipment. Among the petty annoyances suffered by the user of open fires and closed stoves we may mention the objectionable habit which fires sometimes have of going out when most needed, and the perversity of some slow-combustion anthracite stoves in roaring most cheerfully on moderately warm days and in smouldering most deliberately when the temperature is low. The cost of attendance may be covered by standing wages, but the avoidance of trouble certainly helps in a measure to solve the great servant problem. The absence of fires should reduce insurance rates, besides giving an added feeling of security, and the comfort of having always at command a source of constant, even heat and an abundance of hot water for domestic use is certainly deserving of consideration.

The technical problems connected with the inception, design, construction, and operation of a central station heating system on a large scale are so varied that we cannot discuss them within the limits of the present article, and can only refer briefly to a few of the chief points for consideration.

In the first place, it does not follow that a central heating plant will be a financial success in every town or district. The cost of generating heat, the character of the buildings to be served, the probability of adequate demands for supplies, and local conditions generally must be taken carefully into account. As a general rule the efficiency of a large modern steam generating plant is so high as compared with that of open fires, stoves, and small heating boilers that an advantage of from 75 to 100 per cent. rests with the central station, which moreover is able to make use of the cheapest form of fuel. Considerable financial benefit may be derived from the combination of a large steam-generating installation, such as that of an electricity power-station, with a central heating system.

The enormous waste of heat attending the application of heat to the production of mechanical power is well known to all who have studied the theory of steam-engines. Of the total amount of steam admitted to the engine a proportion ranging from 70 to 90 per cent. passes away as exhaust, and even in the most perfect engine plants a very large proportion of the heat is unavoidably wasted.

American practice shows that where an electricity generating station is situated so that it can be applied to the supply of heat to consumers, a kilowatt of electrical energy can be produced at considerably lower cost in conjunction with a central station heating system than that obtaining when the exhaust steam from the engines is condensed. The exact figures vary in different localties, but as a general rule the revenue from the sale of heat is more than sufficient to recoup the cost of fuel, after allowing for maintenance and interest on capital. Hence the combination of heat supply and electricity generating systems should result in mutual advantage. Illustrations of such combination on a comparatively small scale in this country are furnished by the arrangements made for the heat supply of a large warehouse building in Manchester and of the new buildings at Waterloo Railway Station, London. In each of these cases hot water is provided from power-stations in the immediate vicinity.

The nature of the engine equipment in a combined heating and power-station naturally demands very serious consideration, and it would be out of place to attempt any discussion of the subject in this article. We may say, however, that there is no practical difficulty in the provision of engines and auxiliaries suitable for the varying demands entailed by the different seasons of the year or by local conditions.

Coming next to the important question of distribution, it should be noted that, although steam is used more extensively than hot water in central station heating systems, the latter gives satisfactory results, and has been largely adopted within recent years.

The maximum distance to which heat can be economically transmitted from a central station is governed by the pipe line losses and the demand at the end of the pipe line. The chief source of loss is that due to the radiation of heat, but, as great care is invariably taken to insulate the pipes in the most effective manner, the loss is kept within comparatively small limits. For instance, the manager of a central station system in Illinois states the loss of steam in the mains to be 6 per cent. of the total amount leaving the station, and Mr. C. R. Bishop, of the American District Steam Company, finds the average transmission loss for low-pressure steam to be about 0·044 lb. per hour per square of pipe surface. Judging from data relating to central stations in the United States, the radius of heat distribution may be taken at from 1 to 1¼ miles from the source of supply. Therefore, if the latter is situated at the centre of the district to be served, there is nothing to prevent a single station from supplying heat to every building within an area of from 4 to 12 square miles in extent. In practice the central station cannot always be established in the best theoretical position, owing to the high cost of land or other adverse conditions. For instance, property owners are apt to object to the presence of a power-station in residential districts, and one of the

district heating companies in New York have experienced trouble in consequence of legal action from various owners claiming damages for injury to property from soot and cinders discharged during heavy load periods.

After the site of a proposed central station has been settled a careful survey should be made of the district to be served, and a plan prepared showing the positions of all buildings, with notes as to the purposes for which they are used. Plans should then be prepared of a distribution system capable of serving the entire district, with due provision for executing the work in sections as the operations of the undertaking are gradually developed.

The pipes, including those for the return of water of condensation from steam services and those acting as returns in hot-water systems must be most thoroughly insulated and protected from moisture. To compensate for the effect of temperature variations, expansion joints should be provided at distances of from 100 ft. to 200 ft., these fittings forming part of the junction boxes whence branch pipes are taken off for the supply of heat to consumers. The junction boxes are placed in brick or concrete manholes so as to permit access as required. In the case of steam systems drips and traps must be fitted at intervals to remove water of condensation, and in the case of hot-water systems forced circulation by means of pumping is an essential to efficiency. Apart from the special features entailed by the distribution of heat in the form of steam or hot water, the network of piping is generally akin to that in every public system for the supply of water or gas, and its installation presents no difficulties that cannot be readily overcome.

When the central station heating system was first introduced charges were based upon either (1) the average coal bill of the consumer for the cold season or (2) the cubical space to be heated. These unsatisfactory methods have now been replaced by rates, which, in the case of steam services, are based upon the actual consumption as denoted by meters, and in the case of hot-water services upon the number of square feet of radiator surface.

The rates charged in American cities vary considerably, and those of our readers who may desire particulars will find them in the Report of the Committee on Rates presented in June, 1912, to the National District Heating Association.

In connection with the relative merits of steam and hot water, it may be pointed out that the latter is a more generally useful medium, as it can be readily applied to the heating or boiling of water for various purposes, or even to the operation of machinery, in addition to its employment for warming buildings. Moreover, steam can be used either in radiators or in calorifiers for heating water for circulation in either heating or hot-water supply systems. On the other hand, the possibilities of hot water are virtually confined to its utilisation in heating apparatus, and in hot-water services for purposes where a high standard of purity is not essential.

Whether or not the central station heating system will take root on a public scale in this country depends largely upon the degree of favour it may find in the eyes of municipal authorities and enterprising persons accustomed to deal with big undertakings of a like nature.

In any event, the progress of the system in the United States deserves close attention, if only for the valuable experience it places at the disposal of architects and heating engineers who are concerned in central station heating as applied to individual establishments and public institutions.

SAND AND COARSE MATERIAL AND PROPORTIONING CONCRETE.*

In correctly-made concrete the amount of sand should be just sufficient to fill the voids in the coarse material, and the amount of cement just sufficient to fill the voids in the mixture of sand and coarse material and to coat all the particles with very thin jointing layers. It is a rational assumption that such concrete will give a maximum of strength with the minimum of cost, and if such assumption be justified by experimental results it follows at once that the proportioning of concrete-forming materials is of the utmost importance. Greater strengths can be obtained by the use of excess of cement, as in the case of the ordinary mix of 1—2—4, but the increase in strength is less than the increase of cost of materials, and is therefore only justified in particular cases.

The strength of any concrete will depend not only upon the materials and their proportions, but also upon the method of using those materials. Any void in a mass of ¾-in. coarse material may be filled in many ways. Firstly, it may be filled with cement and sand mortar, as in the 1—2—4 concrete; secondly, it may be filled with a piece of stone which practically fills the whole space; and, thirdly, it may be filled with a number of stones which vary in size with a minimum amount of cement and sand mortar. This first filling is composed almost wholly of joints, and on that account is weak; the second filling is strong, owing to the absence of joints, but it is impracticable; but the third is a compromise which is not only practicable but also strong. It will be seen that the amount of the variations in size or the grading will depend upon the nature and quality of the work required. On the one hand there will be good but costly filling, and on the other a cheap but still good filling, and, whether the gradation be large or small, the filling will be better than one of cement and sand mortar only.

With a view to testing the effect of "proportioning" upon the strength and other properties, and also the cost of concrete, the authors drew up a series of experiments, the intention being to test compressive strength, modulus of rupture, specific gravity, water resistance, and fire resistance. Various difficulties arose in the course of the work which not only prevented the paper being presented on the original date, but prevented also the inclusion of specific gravity, water-resistance and fire-resistance tests. The series involve 216 test-pieces, to which must be added others prepared for water and fire resistance and specific gravity tests, but which could not be tested in the time available. The voids were measured in a patent apparatus designed by Mr. Davenport, which gives results to ¼ of 1 per cent., and which was found to be independent of the observer. The preliminary data comprised tests on Portland cement (which was Martin, Earle, & Co.'s brand "Rhinoceros"), size of granite-chips, volume of chips per batch, percentage volume of voids in chips, sizes of river-sand used, volume of sand used per batch, percentage volume of voids in sand, and the volume of cement used per batch. Regarding the latter item it must be noted that no allowance was made for the excess cement required for jointing, only the amount required to fill the voids being used. Had time permitted it the correct allowance in each case would have been ascertained and additional tests made therewith. The limited time made it impossible to test the cement before using it for the concreted test-pieces, the brand only suggesting its probable good qualities.

The batches were hand-mixed by engineering (Senior Honours) students, and, as no special means of testing the thoroughness of the mix were adopted, the resulting concrete will probably not compare favourably with machine-mixed so far as uniformity of results goes. Every care was exercised, however, in the mixing to get all the materials thoroughly intermixed and apparently uniform. This proved to be the case when the specimens were tested. The moulds were made of planed boards, bolted together in gangs, damped before using, and lined with paper on the under side to facilitate removal. In spite of this, several pieces were damaged in removal, due more particularly to the relatively small sections used.

Immediately after mixing the moulds were filled and left in a tool-shed till required for testing. They were wetted regularly every three or four days.

It was found that the ratio of compressive to tensile strength varied more in the one-month than the three-month tests, and is not sufficiently uniform to base any conclusions upon beyond the fact that such ratio is not constant. It is considered by the authors, however, that this ratio should be more or less constant, as the failure, whether compressive or tensile, depends upon the adhesive strength of the cement.

The ratios, strength at three months to strength at one month, were more or less uniform, more particularly in the case of compressive strengths. In the case of 1—2—4 concrete the modulus of rupture appears to increase more rapidly than the compressive strength, while in the other series with cement accurately proportioned, the compressive strength increases more rapidly than the modulus of rupture, as out of six series only one runs the other way, probably due to rather dry mixing of those three-month test-pieces.

Although the cement tests are unsatisfactory it will be possible to compare the strengths and costs of the concrete in the different series, as they will probably all be affected to the same extent. The most important point brought out by such comparison is the fact that for accurate proportions the ratio $\frac{\text{cost of cement}}{\text{total cost}}$ is practically constant for all gradings taken in the tests, so that when the graded coarse material is used the total cost need only be further considered. Of course, the total cost is always the final criterion as regards economy, and it may be suggested that the ratio cost of cement to total cost need not be considered. But the relative values of total cost obtained may be altered when additional tests are made at other ages, and it is difficult to say whether they will be affected by the ratio, so that if it can be shown conclusively that this ratio is constant, or nearly so, the total cost, age, and proportions need only be dealt with.

The authors do not feel justified in attempting to generalise from the results given in the tables, as they consider such results do no more than open up the subject of proportioning and grading in relation to cost. They have no hesitation, however, in saying that the figures given by them show conclusively that the subject is well worth being made the object of special research, and, while they cannot promise additional results for any special time, will continue the work and hope to place their results before the Institute at some future date.

* Summary of a recent paper read before the Concrete Institute on "Sand and Coarse Material and Proportioning Concrete," by Mr. John A. Davenport, M.Sc. (Vict.), B.Eng. (Liverpool), Assoc.M.Inst.C.E., A.M.I.Mech.E., M.C.I., and Professor S. W. Perrott, M.A.I. (Dublin), M.Inst.C.E., M.C.I., Professor of Civil Engineering at Liverpool University.

SEWAGE TREATMENT BY ELECTROLYSIS.

A NEW method for the treatment of sewage by electrolysis was described by Mr. T. Williams in the *Daily Telegraph* in December last, but at that time the writer could not produce any authoritative figures to prove the effectiveness of the system.

Since then actual experiments have been made on samples of sewage extracted from the Holborn sewers, and the results have been duly certified by a qualified analyst. These experiments certainly go to prove that electricity can be of great service in the direction of purifying all kinds of liquid sewage, particularly from bacteria and solid matter.

Two samples of two gallons each were taken, one classed as "rather weak" and the other as "strong." The former contained solids in suspension and solution amounting respectively to 98 and 81 parts per 100,000; whilst for the latter the corresponding figures were 114·6 and 107.

The Electrolysis.

Both samples were placed in glass jars, in which cast-iron electrodes were suspended about 4½ in. apart and a current of electricity was thereupon passed through the weak sewage for twenty-five minutes, the strong sewage receiving the current for half this length of time. The temperature of the sewage at the end of the first experiment was 118 deg. Fahr., and at the end of the second experiment 93 deg. Fahr. A scum formed on the surface of each sample, and this was found to contain fat in the proportion of 0·3 per cent. and 9·3 per cent. respectively for the weak and strong sewage samples. The rest of the electrolysed matter passed through a 3-in. filtering layer of coarse coke, this removing most of the matter in suspension, but adding to that in solution. This addition can only have come about as a result of soluble matter being present in the coke used.

The effect of the electricity alone in decreasing the solid matter both in suspension and in solution was most marked.

Destruction of Bacteria.

The sterilisation effects, however, were new, and even more remarkable, the current having a very marked germicidal action on the bacteria in the case of both samples of sewage, which originally contained respectively 900,000 and 4,520,000 bacteria per cubic centimetre. Only 980 and 2,500 bacteria were left in the samples in each cubic centimetre, it not being expected, from the conditions of the experiment, that the treated liquids would be absolutely sterile.

THE BUILDING TRADE.

FROM WORKMAN TO MASTER.—IV.

THE demand for houses is not a steady demand—it comes in waves.

A man who begins on the rising wave must keep his eyes open for the moment when it has reached the crest, and then begin to draw in his commitments and sell all he can so as to get his capital free against the time of depression, and this for two reasons—the first, in order that he may be able to meet all payments and not find himself in difficulties for want of ready-money; the second, so that he may be able to take advantage of the period of low prices which is sure to follow the recession of the wave of demand, when his chance will come to secure a suitable site for his next venture.

Sometimes the depression lasts a long time, as it has done this last time, and a man has to cast about to see how he is to manage to earn a living. It is then that he will be likely to turn to general contracting as being a natural development of his business. While yet in a small way of business and unable to attempt much, he will have to look to a jobbing kind of trade, dealing directly with the clients. If he has plenty of friends among people of some position he may do very well in this way, but he must adapt his methods and choose his workmen carefully to that end.

A jobbing trade implies that his men have to work in and about inhabited dwellings'; they must therefore comport themselves circumspectly and be well thought of by the personnel of the families for whom the work is done. Ladies are very particular about the behaviour of workmen in the house—they must not be too familiar with the servants, they must be polite and willing to oblige and cleanly in person and habits. Half the battle in carrying on a select jobbing trade lies in the selection and management of the men so that they become in request at houses where they work. This has its dangers for an employer as well as its advantages, because if such a workman starts for himself he may annex custom from the families where he has worked. The employer can only guard against this by consistent personal supervision of the work and by constant personal contact with those who employ him.

If he is in a sufficiently good financial position to take on work for architects, he will have to exercise similar tactics with them and gain their confidence, and have foremen under him whom they like and trust. The larger work involves entering into legal contracts wherein he will find himself hedged about with many restrictions. This need not frighten him if he makes up his mind that he will live up to his responsibilities, devote his best skill to the service of the client, and fulfil the conditions of the contract both in letter and spirit.

The difficulty he will have will be to get prices for his work which will enable him to do this and yet earn a profit.

There is immense scope for skill and ingenuity in this. The pricing of the estimate is an art in itself, and the organising and manning and conduct of the work is another. He will depend for the success of his financial arrangements upon getting the work done quickly and in such a way that every month he will be able to get a substantial interim payment. This implies a careful planning of deliveries of goods, and to ensure this involves having everything selected and arranged for in good time and something of luck besides.

Hence he needs a good margin of liquid capital over and above his actual commitments to enable him to face delays due to causes beyond his control, and he must be very careful not to undertake more work than he can adequately finance.

To enable him to conduct his new and growing business on the lines here laid down he must at the very outset adopt an efficient system of account keeping which will show him as he goes along how his work is costing, what are his financial liabilities, and how he is to meet them.

Beginning in a small way, he will be tempted to try to do his accounting himself, mostly at nights. This is folly, and usually leads to disaster. There will be plenty for him to do at nights in studying how to get the work done cheaply, how to ensure deliveries, how to price accurately when estimating, and in planning out his next day's work. These are things he must do himself, but accounting he can get done at a reasonable cost. There are plenty of clerks who are glad to make a little extra by taking on evening work of this kind. The man to get is one who thoroughly understands double entry and up-to-date methods of presenting costs. The average builder's clerk in provincial towns is of little worth—his knowledge seldom goes beyond keeping a simple cost price.

There are good systems in use by some few builders, and the beginner should seek until he finds one, master it so that he knows its capabilities, and then hire an accountant to carry it out. Money spent on employing a really competent man will be well spent and repay itself in success and in peace of mind.

Stress is laid on this because there is no part of a builder's business, especially in the case of beginners, which is more neglected.

If we suppose now that the workman has successfully budded into a small master and feels that he has it in him to become a captain of industry and is ambitious of rising in life and being equal to his better fortune, he must find time for a certain amount of self-culture. He must see in what respects he falls behind those above him and try to make good his deficiencies. He should be a reader of both general literature and technical literature connected with his business. He needs to have a good general knowledge of architecture and of methods of construction. He should pay attention to manners and dress and language.

He should become a member of a Builders' Association and get to know the ethical standard of conduct which governs it. Just as he had to make friends of those from whom he needed help to start, so he must make friends of his competitors in business and play the business game like a sportsman; he will find it pay him well. In this way he will be able to get the best out of his business life, provided he retains enough modesty not to become snobbish and ashamed of his beginnings.

The writer has in mind the man he referred to previously, who started life with a capital of less than £50 and is now a rich man, and who still remains a genial, unassuming fellow, full of droll stories of his experiences, and still retaining friendships made when he was a simple journeyman, and who nevertheless has been the recipient of the most flattering honours that his fellow-builders can accord to one of their number. Some people, in speaking of him, say he has been phenomenally lucky, but it would be truer to say that he was endowed at birth with just such qualities as have been indicated in these articles and that he used them for all they were worth. Others may do the same, for the building trade is still a career open to talent.

THE PRESENT POSITION OF THE LONDON DISPUTE.

SINCE our last issue the employers have signed new working rules with the woodcutting machinists. As previously reported, new agreements have been arrived at with the stonemasons and crane drivers, and these two trades, together with the woodcutting machinists, have now returned to work. Negotiations are in progress with the labourers, carpenters and joiners, painters, plumbers, smiths and fitters, and bricklayers.

Meanwhile the National Federation of Building Trades Employers is taking a vote of its members in accordance with its resolution of June 19. Numerous meetings are being held in the provinces and the following resolution was passed at a meeting of the Yorkshire Federation of Building Trade Employers held at Batley:—"That the Federation is unanimously of opinion that wholehearted support should be given to the London employers in connection with the London dispute, and recommends every employer to vote in favour of authorising the Executive Council of the National Federation, at its discretion, to declare a national lock-out of the building trades unions concerned, and to keep them out until a settlement is effected." The Midland Centre of the National Federation, at its meeting held at Wolverhampton, passed a resolution as follows:—"That the members of this meeting, having heard the statements of Messrs. Henry Holloway and W. Moffat, pledge themselves to support the federated builders in London by voting in favour of a national lock-out, and also to use their influence in their respective associations with a view to securing the necessary majority in favour of same."

On Tuesday last Mr. William Willett presided over a largely-attended meeting of non-associated London builders. Representatives of the London Master Builders' Association and the London Association of Master Decorators were present, and after discussion the following resolutions were passed:—(1) "That in the opinion of this meeting of master builders who are not members of the London Master Builders' Association the time has arrived when further steps must be taken to bring the present dispute in the building trade to an end." (2) "That all present at this meeting undertake to close their works to union labour on August 1 next if a settlement be not arrived at in the interim." (3) "That a committee be appointed to report how this resolution can best be carried out, and whether the basis of membership of the London Master Builders' Association can be broadened so as to bring in all classes of master builders in the London district."

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 to 1909.

THE Building Act Committee of the London County Council have consented to the following applications under the London Building Acts, 1894 to 1909:—

Lines of Frontage and Projections.

Fulham.—Erection of Nos. 172 and 174, Fulham Palace-road, Fulham (Messrs. Allen & Norris).

Hackney, Central.—Balcony in front of a building on the southern side of Englefield-road, Hackney (Mr. M. W. Matts).

Islington, West.—Motor garage and dispensary at the rear of No. 20, Richmond-road, Islington (Messrs. G. S. S. Williams & Son for Dr. Rowntree).

Kennington.—Projecting one-story shop in front of No. 188, Kennington Park-road, Kennington (Messrs. Briant & Son for Messrs. S. Frost & Co., Ltd.).

Kensington, North.—Bay-windows and porches to Nos. 37-51 (odd numbers only) inclusive, St. Helen's-gardens, Kensington (Mr. H. G. Gates).

Kensington, North.—Porches to fifteen houses on the eastern side and fifteen houses on the western side of Highlever-road, Kensington (Mr. H. G. Gates).

Marylebone, East.—Balconies at Nos. 216-218, Great Portland-street, Marylebone (Mr. S. Freeman).

Wandsworth.—Bay-windows, porches, oriels, bargeboards, and sham half-timber work to eight houses on the north-western side of Ribblesdale-road, Streatham (Mr. R. Bilham).

Wandsworth.—Addition at the rear of No. 29, Ambleside-avenue, Streatham, next Rydal-road (Mr. H. P. Wyatt for Mr. F. Baker).

Wandsworth.—Bay-windows, hoods, and bargeboards to fourteen houses on the north-western side of Longmead-road, Wandsworth (Mr. E. F. Baverstock).

Woolwich.—Bay-window and verandah at No. 53, Genesta-road, Plumstead (Messrs. Robinson & Roods for Mr. W. H. White).

Width of Way.

Holborn.—Addition at the rear of No. 16, Lincoln's Inn-fields, Holborn, next Whetstone Park (Mr. C. C. Bradley for the London Society for Promoting Christianity among the Jews).

Peckham.—Erection of a building on the eastern side of Basing-place, Peckham (Messrs. A. Coldman & Son for Mr. J. Morgan).

Width of Way and Line of Frontage.

Southwark, West.—Erection of a building on the site of Nos. 44 to 50, Lancaster-street, Southwark (Mr. H. Perry for the Premier Press, Ltd.).

Width of Way and Construction.

City of London.—Erection of two gangways to premises known as Brewer's, Chester, and Valley Quays, over the public way of Lower Thames-street, City (Navigation Properties Company, Ltd.).

Width of Way, Space at Rear, and Projections.

Westminster.—Alterations of Nos. 35 and 37, Palace-street, Westminster, and the erection of projecting balconies and a hood (Mr. L. S. Crosbie for Mr. R. W. Seton-Watson).

Lines of Frontage, Space at Rear, and Projections.

Chelsea.—House at the corner of Church-street and Mulberry-walk, Chelsea (Mr. W. K. McDermott for Mr. W. McDermott).

Lewisham.—Re-erection of the Prince of Wales public-house, Perry-rise, Forest Hill (Mr. E. Carter for Messrs. Charrington & Co., Ltd.).

Alteration of Buildings.

Hampstead.—Alterations at No. 1, Princess-mews, Hampstead (Mr. A. F. Faulkner for Mr. W. Willett).

Hampstead.—Alteration at the rear of No. 2, Oak-grove, Hampstead (Messrs. Harvey & Potter for Messrs. Welford & Sons, Ltd.).

Kensington, South.—Additional story at No. 36, Bedford-gardens, Kensington (Mr. J. Lawrance for Mr. W. Callingham).

Cubical Extent.

St. George, Hanover-square.—Alterations in connection with a change of user of portions of the Pantheon, 173, Oxford-street (Mr. H. Chatfeild Clarke for Messrs. W. & A. Gilbey, Ltd.).

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ABERDEEN.—Plans passed:—Reconstruction of premises, No. 16, Golden-square, for the Aberdeen C.C., per Messrs. Walker & Duncan, architects; lecture room, etc., on the west side of Viewfield-road, adjoining St. Luke's, for the Governors of the North of Scotland College of Agriculture, per Messrs. Kelly & Nicol, architects; alterations and additions in connection with the Central Auction Mart, Powis-terrace, for the Aberdeen Cattle and Farm Produce Association, Ltd., per Messrs. Walker & Duncan, architects; alterations in connection with the premises, No. 18, St. Nicholas-street, for the London Rubber Company, per Mr. John Cameron, architect; garage at No. 59, Beaconsfield-place, for Mr. Alexander Robb, aerated water manufacturer, per Messrs. Jenkins & Marr, architects; alterations in connection with Ashley House for Messrs. D. & J. R. M'Millan, architects; waiting-room and bicycle shed in connection with Royal Infirmary for the Directors, per Messrs. Kelly & Nicol, architects; alterations in connection with the Middle Public School, Gallowgate, per Mr. J. A. O. Allan, architect; alterations in connection with the Old Aberdeen Public School, per Mr. J. A. O. Allan, architect; alterations in connection with the Skene-square Public School, per Mr. J. A. O. Allan, architect; garages at 97, Holburn-street, for the City Property Association, per Messrs. Walker & Duncan, architects; and alterations at 183, Union-street for Messrs. Marr Woods, Ltd., music sellers, per Mr. George B. Mitchell, architect.

Aldershot.—Plans passed:—Two cottages in Holly-road for Mr. C. Wenninger; two houses in Cemetery-road for Mr. G. W. Chandler.

Ashton-under-Lyne. — Extension of suction-plant works of the National Gas Engine Company.

Banbury.—Plans passed by T.C.:—Extension of premises at No. 4, Parson's-street, for Mr. M. B. Smith; additions to the Albion Inn, Bridge-street, for Messrs. Hunt, Edmunds, & Co., Ltd.; forty washhouses at the back of her cottages in the Causeway, for Mrs. M. B. Robins.

Barnoldswick.—Plans passed by U.D.C.:—Seventeen houses off Carr-road for Messrs. Clegg & Todd; nine houses in Federation-street for Messrs. Slater & Brown; ten houses in Gisburn-road for Messrs. Shorrock & Hackrigg; twenty-seven houses in East-avenue for Mr. J. R. Broughton; alterations to property in Walmsgate for the Bethesda Baptist Church Trustees; bungalow in Colne-road for Messrs. Nutter; two semi-detached houses in Brogden-lane for Messrs. Edmondson & Heyworth.

Barrow.—Plans passed by T.C.:—Six dwelling-houses in Abbey-road for Messrs. J. H. Neal & Son, Ltd.; dwelling-house in Wheat Close-road

* See also our list of Competitions, Contracts, etc., on page 8*.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur:—

——	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Aberdare	9	—	9	9	—	9	7½	6½	6½	6½
Accrington	9½	9½	9	9	9	9	8½	6½	6½	6½
Altrincham	9½	10	10½	10	8½	9½	9	6	6	6
Ashton-under-Lyne	10½	10½	10	10	8½	9½	9½	6	6	6
Barnsley	9½	9½	9½	9½	9	8½	8	7	7	7
Barrow-in-Furness	9½	10	9½	9½	9	9	9½	7	7	7
Barry	9½	9½	9½	10	—	9	8½	6	6	6
Bath	8	8	8½	8	7½	7½	7½	5½	5½	5½
Bedford	8	7½	7½	8½	—	8	6½	5	5	5
Birkenhead	11	11	11	11½	10	11	9½	7	7	7
Birmingham	10	10	10	10½	9	10½	9	7	7	7
Bishop Auckland	9	9	9	9	10	9	7½	6	6	6½
Blackburn	10	10½	10	9½	9½	9½	9½	6½	7	7
Blackpool	9½	9½	9½	9½	8½	8½	8½	6	6	6
Bolton	10	10½	10	10½	9½	10	9½	—	—	—
Bournemouth	8½	8½	8½	8½	8½	8½	8	6	6	6
Bradford	10	10	9	9½	9½	10	8½	7	7	7
Bridgwater	6½	6½	6½	6½	6½	6½	6	4	4	4
Brighton	8–9	8	8	—	—	—	—	—	—	—
Bristol	9½	9½	9½	9½	—	9½	9	6½	6½	6½
Burnley	9½	9½	9½	9½	8	9	8½	6½	6½	6½
Burton-on-Trent	9	9	9	9	8½	9	8½	6	6	6
Bury	10	10	10	9	9	10	9	6	6	6
Cambridge	9	8½	8½	9	9	9	7	5½	5½	5½
Canterbury	8½	8	8	10	—	8½–9	6½	5	5	5
Cardiff	9½	9½	9½	9½	9½	9½	8½	6½	6½	6½
Chatham	8	9	9	9	9	8½	7	6	6	6
Chelmsford	8	7½	8	—	—	7½	6½	5	5	5½
Cheltenham	8½	8½	8½	8½	—	8½	8	5½	5½	5½
Chester	9½	10	9½	9	9	9½	8½	5½	5½	5–5½
Chesterfield	8½	9	8	9	9	8½	7½	5½	5½	5½
Colchester	8	8	8	9	8	9	8	5	5	5½
Coventry	9	9½	9½	9½	9½	9½	8½	6½	6½	7
Crewe	8½	8	7½	9	8	7½–8	7½	5	5½	6½
Darlington	9½	9½	9	9½	10	9	8½	6½	6½	7
Derby	9½	9½	9	9	9	9	8	6½	6½	6½
Doncaster	9	9	9	9	8½	9	8	6½	6½	6½
Dudley	8½	8½	8½	8½	8½	8	7½	5½	5½	5½
Durham	9	9	9	9	9½	9	8	6	6	6½
East Glamorgan and Monmouthshire Valleys	9	9	9	9	—	—	8	6½	6½	6½
Exeter	8	8	8	7½	7½	7½	7	5½	5½	5½
Folkestone	8½	8½	8½	9	8½	8½	7–7½	6½	6½	6½
Gloucester	8	8½	8½	8	8	8½	8	6	6	6
Grantham	8	8	7½	7½–8	7½–8	7	8½	5	5	5
Grays	—	10	10	—	—	9½	8½	7	7	7
Grimsby	9	9	9	—	9	8	8½	7	7	—
Great Yarmouth	7½	7½	7½	8½	7½	7½	6	4½	6½	6½
Halifax	9½	9½	9	8½	8½	9	8½	6½	6½	6½
Harrogate	9½	9	9	9	8	9	8½	6½	7	7½
Hartlepools	9	10	9½	10	10	10	8½	7	7	5½–6
Hastings	8½	8	8	8½	8	7	7	6½	5½	5
Hereford	8	8	7½	8½	8	7	6½	5	5	5
Huddersfield	9½	9½	9	9½	10	9	8½	6½	6½	6½
Hull	9½	9½	9½	9½	9½	9½	8½	7	7	7
Ipswich	8½	8½	8½	9	8½	8½	7	5½	5½	5½
Lancaster	10	10	9	9	9	8½	8½	6	6	6
Leamington Spa	9	8½	8½	8½	8½	8½	7½	5½	5½	5½
Leeds	10	10	10	10	9	9½	8½	7	7	7
Leicester	9½	9½	9½	10½	9½	9½	8	7	7	7½
Lincoln	9	8½	8½	9	8	8½	8	6	6	6
Liverpool	11	11	11	11	10½	10½	9½	6½	7	7
Llanelly	9½	9½	8½	8½	9 ½	8½	8	5½	5½	5½
London	11½	11½	11½	11½	—	11.	9	8	8	8
Loughborough	9	8½	8½	9	9	8½	7½	5½	5½	5½
Luton	9½	8½	8½	8½	9	8½	7½	5½	5½	5½
Maidstone	9	9	9	9	9	9	8	6	6	6
Manchester	10	10½	10½	11	9½	10	9½	6½	6½	7½
Mansfield	8½	9	8½	8½	—	8½	8	6	6	—
Merthyr Tydfil	9½	9½	9½	9½	8½	8	8½	6½	6½	6½
Middlesbrough	9	10	9½	10	10	10	8½	7	7	7
Newcastle-on-Tyne	10	10	10	10	10	10	9	6½	6½	6½
Newport, Mon.	9	9	9	9	8½	9	8½	6	6	6
Northampton	9	9	9	9	8½	9	8	6	6	6
Norwich	8	8½	8½	8½	8	8½	8	5½	5½	5½
Nottingham	10	9½	10	10½	9½	10	9	7	7	7½
Oldham	10½	10½	10	10	9	10	9½	7	7	7½
Oxford	9	8½	8½	8½	8	8½	7½	6	6	6
Plymouth	9	9	9	9	9	9	8	6	6	6
Pontypridd	9	9	8½	9	9	9	8½	6½	6½	6½
Portsmouth	9½	9½	9½	9½	—	8½	7½	7	7	7
Preston	10	10½	10	9½	9	10	9½	5½	6	6
Reading	8½	9	9	9½	8½	9	7½	6	6	6
Rochdale	10	10½	10	9½	9	9½	9	6½	6½	6½
Rochester	8	9	9	9	8	8½	7	6	6	6
Rugby	8½	8½	8½	8½	9	9½	8	5½	5½	5½
St. Albans	9	9	9	9-10	9	9-10	8½	6½	6	6½
St. Helens	9	9½	10	9	9	9½	9½	6	6	6
Scarborough	8½	9	8½	9½	8	8	7½	6½	6½	6½
Sheffield	10½	9½	9½	9½	9½	9½	8½	6½	6½	6½
Shrewsbury	8½	8½	8½	8½	—	8½	7	5½	5½	5½
Southampton	8½	9½	9½	8	9	9½	8½	6	6	6½
Southend-on-Sea	9	9	9	9	P'cework	9	7	6	6	6
Southport	9	9½	9½	9½	9	9½	9	6½	6	6½
South Shields	10	10	10	10	10	8½	8½	6	6½–7	7
Stockport	10	10	9½	10	9	9½	8½	7	7	7½
Stockton-on-Tees	9	10	9½	10	10	10	9	6	6	—
Stoke-on-Trent	9	9½	9	9	—	8½	8	6	6	6
Stroud	7½	7½	7½	7½	7½	7½	7	5	5	5
Sunderland	10	10	10	10	9½	9	9	6½	6	7
Swansea	9	9	9	9	8½	9	8½	6	6	6
Taunton	7	7	7	7	8	9	8	4½	4½	4½
Wakefield	9½	9½	8½	9½	8½	8½	7½	7	7	7
Walsall	9	8½	9	8½	8½	8½	8	6½	5½	6½
Warrington	8½	9½	9½	10	8½	9½	8½	5½–6	6	6
West Bromwich	9½	9½	9	9½	9	8½	7½	6½	6½	6½
Wigan	10	10½	9½	9½	—	9	9½	7	7	7
Windsor	9	9	9	10	8	9	8	6	6	6
Wolverhampton	9½	9½	9½	10	8½	10	7½	6½	6½	6½
Worcester	8½	9	9	8½	8½	8½	8	6	6	6
York	9½	9½	8½	9½	9½	8½	8	6½	6½	6½

The mason's rate given is for bankers; fixers usually ½d. per hour extra.

for Mr. A. F. Tosh; Carey Hall, Ramsden Dock-road and Siemens-street, for the Baptist Building Committee; two dwelling-houses in Park-drive for Messrs. Atkinson & Prickett; dwelling-house, workshop, etc., at North End, Walney, for Mr. A. Smith; hostel at Abbey-road for Messrs. Vickers, Ltd.; twelve dwelling-houses in Roose-road for Mr. A. Ingham; dwelling-house at the corner of Abbey-road and Fairfield-lane for Dr. Blacklee.

Bedford.—Plans passed:—Additions to premises in Lime-street for Messrs. Carter Bros.; alterations to 45, Ampthill-street, for Mr. C. Astell; alterations, etc., 15, The Crescent, for Mr. P. J. Dunstall; house, Beverley-crescent, for Mr. Dickins.

Bexhill.—Plans passed:—Garage, Caledonian School, Cooden, Messrs. Fair & Myer (for the Misses Wynne & Barker); detached house, Clavering-walk, Cooden, Messrs. Fair & Myer (Mr. W. Blay); business premises, 62 and 64, Devonshire-road, Mr. J. H. Lye (Mr. F. C. Carter); 62, Wickham-avenue, Mr. J. B. Wall (Messrs. Strange & Co.); two detached houses, Sutherland-avenue, Mr. J. E. Maynard (Mr. Joseph Martin).

Bideford.—The L.G.B. have sanctioned the R.D.C. borrowing £146 and £2,200 respectively for buying land and erecting working-class dwellings at Hartland, Parkham, Wolfardisworthy, and Buckland Brewer.

Blackburn.—Messrs. Marriage & Pinnock, cotton manufacturers, of Withnell, have issued a notice that land will be given free to any of their permanent hands who desire to erect their own house. The only stipulation made is that plans must be approved by the employers.

Bournemouth.—Plans passed by T.C.:—Additions, Barton Close, Clifton-road, Mr. J. Standring; additions, Boscombe Picture House, Christchurch-road, the Boscombe Picture House Company; alterations, Glendale, Avenue-road, Messrs. H. Robson & Son; additions, Devonshire House, Richmond-hill, Mrs. Fisher; store, Earls Barton, Truscott-avenue, Mr. A. Drage; house, Firs Glen-road, Mrs. M. A. Stewart; additions, Narberth, Guildhill-road, Mr. F. Groves; two houses, Portland-road, Mr. H. Hiscock; house, corner Woods View and Firs Glen roads, Mr. W. King; house, Wimborne-road, Mrs. C. Frampton; six houses, Seaward-avenue, Mr. R. C. Mayhoe; house, Chessel-avenue, Mr. F. W. Burton; motor garage, Monard, Knole-road, Captain Strong; house, West Overcliff-drive, Messrs. F. Hoare & Sons; house, Pine-avenue, Messrs. Golton Bros.; additions, Moorcourt, Cavendish-road, Mr. G. E. Ede; house, St. Luke's-road, Mr. H. Harding; additions, 1, Lowther-road, Mr. E. Jones; house, Firbank-road, Mr. H. Vatcher; house, Rutland-road, Mr. A. Hunt; house, Stokewood-road, Messrs. Lambert & Son; house, Coronation-avenue, Mr. Wellstead; house, Stokewood-road, Mr. A. D. Lambert; house, Montague-road; house, Firs Glen-road, Mr. N. Hibbs; house, 3, Charminster-road, Mr. W. Miles; pair of flats, 74, Southcote-road, Mr. H. V. D'Esterre; house, Pine-road, Mr. C. Stone; additions, Channel View, Burnaby-road, Mrs. C. Sharland; house, Firs Glen-road, Mr. H. S. Woodrow; house, Bryanstone-road, Mr. A. Barnes; flats, Inverleigh-road, Mr. E. J. Mills; additions, Burnham Lodge, Alumhurst-road, Mr. G. Todd; store, West-road, Mr. Thompson.

Bradford.—The Health Committee are recommending schemes which, if adopted, mean the expenditure of over £176,000 on the provision of municipal houses at Southfield, Orsal, and in Farfleet-street. It is further recommended that nearly £9,000 be spent on the acquisition of sites in Morley-street for buildings for the various municipal medical services.

Brandon.—Plans passed:—Alterations and additions of two rooms to twenty-five houses in Albert-street, Brandon Colliery, for Messrs. Strakers & Love; four cottages in Littleburn-lane, for Mr. Lambton Story.

Brigg.—The C.C. propose erecting a Council school for 200 children. The Managers of the Church of England schools contemplate altering their schools for boys and girls into a school for boys only.

Chester-le-Street.—Plans approved by R.D.C.:—Institute hall and caretaker's house at Sacriston, for the Institute Trustees; twelve cottages for aged miners at New Lambton, for Lord Joicey; additions to Birtley Rectory, for the vicar. The R.D.C. have approved plans for 100 houses to be erected at Harraton Colliery, and have decided to apply to the L.G.B. for sanction to borrow £26,250 for their erection.

Colne.—Plans passed:—Three houses, Rutland-street, for Mr. J. Metcalfe; addition to White Syke Farm, for Mr. W. H. Brown; proposed street off Wordsworth-road, for Messrs. Green & Sons; estate plan of a portion of Cook House Estate, for Messrs. W. Cox & Sons; six houses, Devon-street, for Mr. A. D. Bailey; fifteen houses, Allendale-street, for Mr. J. Higgin; sixteen houses, Haverholt-road, for Messrs. F. & H. Capstick.

Croydon.—Plans passed:—Mr. D. G. Collins, caddies' quarters and workshop, Addiscombe-road; Norbury Garden Village, one house, Pollards-hill West; Mr. A. W. Dawson, one house, Addiscombe-road; Mr. E. J. Tench, one house, Castlemaine-avenue; Messrs. W. Aston & Co., twelve houses, Norbury-crescent; Messrs. W. Aston & Co., eleven houses, Kilmartin-avenue; Messrs. J. H. Jenkin & Co., one house, Norbury-avenue; Mr. J. Weller, eighteen houses, Addiscombe-avenue, four houses, Coniston-road; Mr. C. Banks, one house, Addiscombe Court-road; Messrs. Paish, Tyler, & Crump, eleven houses, Ashburton-avenue; Messrs. Chesterton & Sons, 208 houses, Norbury-avenue; Messrs. Paish, Tyler, & Crump, one house, Fryston-avenue.

Darlington.—Plans passed:—Mr. J. T. Dickinson, two houses, Garden Suburb; Mr. W. W. Franks, conversion of two houses into two lock-up shops Russell-street; Mr. J. E. Chilton, five houses, Willow-road; two houses and stables, Victoria-road; six houses, Olympic-street; Messrs. Clark & Moscrop, house, Marshall-street; Messrs. G. Dickinson & Son, house, Durham-road.

Darwen.—Plans passed:—Eight houses in Hartington-road, for Mr. H. Westwell; weaving-shed at Hollin Grove Mill, for Messrs. T. Gillibrand & Sons; extension to offices at Olive Mill, for Messrs. J. Catlow & Sons, Ltd.; new classroom in Duckworth-street, for the Trustees of the United Methodist Church; new offices at Britannia Mill, for the Darwen Spinning Company, Ltd.; conversation-room in Bolton-road, for the Trustees of the Conservative Club.

Eastry.—Plans of a house at Sandwich Bay, Worth, for Messrs. G. H. Denne & Son, have been passed.

Eton.—Plans passed by R.D.C.:—Seven cottages in the Oxford-road, Denham, for Mr. J. Bell White; alterations and additions at Southlands, Denham, for Mr. G. F. Gadsden; house adjoining Gerrards Cross Common, for Mrs. H. M. Woodbridge; cottage at Asheroft, Burnham, for Mr. R. Dunthorne.

Folkestone.—Plans passed:—Mrs. E. C. Fentiman (owner) (Mr. G. H. Camburn, architect) (Mr. A. J. Fentiman, builder), for a garage at the rear of No. 4, Broadfield-road; the Rev. Mother Superior (owner) (the Very Rev. Canon Scholes, and Raymond, architect), for a convent school, Ravenlea-road; Mr. F. E. Moody (owner and builder) (Mr. A. R. Bowles, architect), for a garage and store, Plain-road; Mr. F. Nicholls (owner), for a detached house in Shorncliffe-road; Mr. W. Davis (builder), for four houses in Morehall-avenue; Mr. F. B. Fairley (owner) (Messrs. W. T. Crouch & Son, architects), for a garage at rear of No. 35, Westbourne-gardens, Sandgate-road; and for six houses in Morehall-avenue, to be built by Messrs. G. Castle & Son.

Gillingham.—Plans passed:—Two dwelling-houses, Second-avenue, for Messrs. H. H. Collins Bros., submitted by Mr. Herbert Collins; store, Springvale, Wigmore, for the Small-holders' Society, submitted by Mr. H. W. Masters, approved; new cement works, Gadshill, for the Gillingham Syndicate, Ltd., submitted by Mr. H. H. Dunstall; bungalow, Bredhurst-road, Wigmore, for Mr. S. Dellbridge, submitted by Mr. A. E. Goodhew; bungalow, Springvale, Wigmore, for Mr. G. Saunders, submitted by Mr. F. Mattocks; house, First-avenue, for Mrs. M. Durling, submitted by Mr. L. J. Newnham; grand stand, Priestfield-road, for the Gillingham Football Club Company, Ltd., submitted by Messrs. Humphreys, Ltd.

Guildford.—Proposed alterations to the isolation hospital will cost between £3,000 and £4,000. A new diphtheria block is to be built, and another block is to be enlarged to provide additional accommodation for scarlet fever patients.

Harwich.—The T.C. are seeking to borrow £2,140 for the erection of workmen's dwellings.

Helston.—Plans for six houses, proposed to be erected at Mullion for the R.D.C., have been passed.

Hertford.—Plans for two new cottages for Lord Desborough at Birch Hall Farm, Cole Green, have been approved.

Hetton.—Plans passed by U.D.C.:—Alterations and additions to a house in Houghton-road, for Mr. M. Lee; two houses in Dorset-street, for Mr. Robbins.

Hexham.—Plans passed:—Conversion of a Wesleyan church into a house at Sproat's Farm, Whittonstall, for Capt. J. F. Laycock, D.S.O.; two houses at Whittonstall, for Captain J. F. Laycock, D.S.O.; two cottages at Colpitts Farm, near Slaley, for Mr. C. S. Hunting, Slaley Hall, Slaley; cottage at the Lodge, Slaley Hall, for Mr. C. S. Hunting, Slaley Hall, Slaley; three houses at East End, North Side, Ovingham, for Messrs. Wright & Dawson; house on the Broomley Estate, near Riding Mill, for Mr. G. C. Kirtley; villa on site near blacksmith's shop, Stocksfield, for Dr. Naismith, Stocksfield; additions and alterations to a villa on the Painshawfield Estate, Stocksfield, for Mr. Duncan; farmhouse and buildings on the Broomley Estate, near Riding Mill, for the Northumberland C.C. Small Holdings Committee, Moot Hall, Newcastle-on-Tyne; Primitive Methodist church at Sparty Lea, Allendale, per Messrs. Marshall & Tweedy, architects, 17, Eldon-square, Newcastle-on-Tyne; farmhouse at Nettle Hill, Allendale, for Mr. Henderson Philipson, Allendale; house at Shield-street, Allendale, for Mr. P. Hetherington, Shield-street, Allendale.

Houghton.—Plans passed by R.D.C.:—Cottages at Leamside, for Messrs. M. & R. Draper & Sons; houses at Bankhead, for Mr. T. Hodgson; cowbyres at East Farm, Newbottle, for the Earl of Durham; and two double-tenemented houses at New Herrington, for Mr. G. McCall.

Hull.—The City Architect has been instructed to prepare plans for a considerable extension of the Grammar School.

Kirkcaldy.—Plans passed by Dean of Guild Court:—Alterations at Forth Works, for Messrs. Barry, Ostlere, & Shepherd, and for the erection of a new building five storeys high; reconstruction of premises recently destroyed by fire in Nairn-street, for Messrs. Barry, Ostlere, & Shepherd; new National Bank buildings at the corner of Loughborough-road and St. Clair-street.

Leatherhead.—It is proposed to build an open-air swimming bath in the grounds at St. John's School.

Lewes.—Plans passed:—New shop front, etc., 14, Cliffe High-street, for Maypole Dairy Company; the new Council school in Western-road: new offices, by way of extension, for Alderman J. H. Every, in Bath-place; new church, for the Rev. F. Bickford Heard, corner of Garden-street and Eastport-lane.

Lewisham.—Mr. E. C. Christmas, Wynell-road, six houses on the south side; Mr. J. Nicholls, Manwood-road, six houses on the east side (Nos. 145 to 155); Messrs. Norfolk & Prior, Newquay-road, five houses on the north side (Nos. 1 to 9); Messrs. Norfolk & Prior, five houses on the south side of Stanstead-road and two houses on the east side of Carholme-road.

Liverpool.—The Mersey Docks and Harbour Board have decided on the erection of a treble-story shed, 150 ft. wide, on the south quay of the Gladstone Dock No. 1, with the necessary cranes, and to provide a double line of rails on the dock side of the shed, at a total estimated cost of £236,500.

Lostwithiel.—The T.C. have decided to erect two cottages for the working classes.

Middleton.—An inquiry has been held by the L.G.B. into the application of the T.C. to borrow £1,185 for a sewer in Manchester New-road.

Motherwell.—Plans passed:—Mrs. Ferguson, for the erection of a tenement of dwelling-houses in Grange-street; Dalziel Co-operative Society, for shops and dwelling-houses in Airbles-street; Mrs. Hollinger, for dwelling-houses in Catherine-street; Messrs. John Grieve & Co., extension of their engineering works.

Nottingham.—The L.G.B. have held an inquiry into the application of the T.C. to borrow £1,000 for alterations at the Victoria Baths.

Richmond.—Plans passed:—Messrs. G. E. Wallis & Son, Ltd., mortuary chapel, Richmond Hospital; Mr. T. W. Watkins, additions, Aintree Lodge, Kew-road; the Larger London Land Company, eight new houses, Leyborne Park; Mr. E. J. Cave, alterations, No. 83, George-street.

Royton.—Plans passed:—Four houses, for Mr. R. Bamford; pair of villas, near Pleasant Inn, Rochdale-road, for Mr. Hy. Beswick; eight dwelling-houses, for Mrs. Hannah Slack; school (mixed), Edge-lane, Longsight, for the vicar and officers of St. Anne's Church; new offices at the Lamb Mills, Higginshaw-lane.

Sheffield.—The T.C. propose erecting a further fifty-nine cottages, and the L.G.B. have held an inquiry.

Standish.—Plans passed by U.D.C.:—Eighteen cottages in Preston-road, for Mr. E. H. Monks; eight cottages in Preston-road, near Langton Bar, for Mr. James Clarke; conversion of Langton Bar House into two dwelling-houses, for Mr. Thomas Barnes; two semi-detached villas in Chorley-road, for Mr. T. H. D. Thew.

Stourbridge.—Plans passed by U.D.C.:—House in South-avenue, for Mr. M. W. Phillips; two houses in Bowling Green-road, for Mr. S. Bateman; additions to a house in Back-lane, Oldswinford, for Mrs. O. Harris; printing works at the rear of 52 and 53, High-street, for Messrs. Mark & Moody, Ltd.; church hall in Market-street, for St. Thomas's Church Building Committee.

Swansea.—Plans passed by R.D.C.:—Brethren Church, Main-road, Clydach, meeting-room; Mr. C. Benjamin, Neath-road, Llansamlet, one house; Mr. W. Merrified, Caemawr, Morriston, one house; Mr. Henry J. Flynn, Harry-street, Morriston, one house; Miss Martell, Bryncoleu-terrace, Sketty, two houses; Mr. Edwin Evans, Gower-road, Killay, alterations to house; Mr. Joseph Bevan, Penrheol, Gorseinon, three houses; Mrs. S. Jenkins, Pontardulais-road, Pontlliw, two houses; Mr. J. R. Williams, Tydraw, Bonymaen, three houses.

Tavistock.—The L.G.B. have held an inquiry into the application of the R.D.C. for sanction to borrow £900 for works of sewerage and sewage disposal at Lydford.

Ulverstone.—Plans approved by R.D.C. for additions to a house at Gillhead, for Mr. Musgrave; and a new house at Sawrey, for Mr. Rothwell.

West Dean.—Plans passed by R.D.C.:—House at Five Acres, for Mr. Edwin Wilson; house at Mile End, for Mr. B. Ambury.

West Hartlepool.—Plans passed:—Swift Beef Company, altering premises, Charles-street; Wood, Straw, and Fibre Company, factory, Mainsforth-terrace; Expanded Metal Company, workshop, Greatham-street; Mr. E. J. White, altering house and shop, Surtees-street and Scarborough-street; Seaton Carew Development Company, two pairs of semi-detached villas, Station-lane, Seaton Carew.

Windsor.—Plans passed:—Swift Beef Company, alterations at No. 46, Thames-street; West London Dairy Company, alterations at 120, Peascod-street; additions to the St. Edward's Schools in the Dorset-road.

GENERAL BUILDING NEWS.

CHURCH HALL, FOREST GATE, E.

The new church hall for St. James's Church, Forest Gate, was designed by Mr. William Jacques, A.R.I.B.A., Fen-court, Fenchurch-street, E.C. The general contractor was Mr. A. E. Symes, Carpenter's-road, Stratford, E.

HOUSE, CLAPHAM PARK, S.W.

A large private house is in course of erection in King's-road, Clapham Park, S.W., from the designs of Mr. Money Marsland, Licentiate R.I.B.A., Water-lane, Great Tower-street, E.C. The builder is Mr. George Hill, Streatham and Regent-street, W.

TRADE NEWS.

Boyle's latest patent "air-pump" concealed ventilators have been applied to Ouchan Parish Church, Isle of Man.

Claridge's asphalt is specified for the covering of roofs to the new *Sheffield Telegraph* Offices in Sheffield.

The extensions to the Isolation Hospital, Devonport, are being supplied with Shorland's double-fronted patent Manchester stoves, with descending smoke flues and special under-bed ventilators, by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth, Manchester.

List of Competitions, Contracts, etc.

For some contracts still open, but not included in this List, see previous issues. **Those with an asterisk (*) are advertised in this number:** Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xxvi.; Auction Sales, xxxii. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

JULY 23.—**East Ellloe.**—COTTAGES.—The East Ellloe R.D.C. are prepared to consider plans and appoint an architect in connection with the erection of cottages within their district. The fees to be paid will be 5 per cent. on the first £500 expended, and 2½ per cent. on the amount of all further work carried out. Mr. S. S. Mossop, Jun., Clerk to the Council, Holbeach.

JULY 24.—**Chapel-en-le-Frith.**—COTTAGES.—The Chapel-en-le-Frith R.D.C. invite competitive designs for cottages. Premiums, £10 10s., £5 5s. and £2 2s. See advertisement in issue of July 3.

JULY 25.—**Redhill.**—POLICE AND FIRE STATION.—The Reigate B.C. invite competitive designs for a new police and fire station. Three premiums are offered, viz., 40, 20, and 10 guineas. See advertisement in issue of June 5, also particulars in issue of June 19.

SEPTEMBER 7.—**London.**—SCHOOLS.—The L.C.C. invite architects to submit designs for two new schools. See advertisement and full particulars in issue of May 1.

SEPTEMBER 18.—**Glasgow.**—BUILDINGS.—The Corporation invite from architects competitive plans of buildings proposed to be erected at the north-west corner of Trongate and High-street. Premiums of £50, £30, and £25 respectively will be awarded to the authors of the designs adjudicated first, second, and third, in order of merit. Plan of the site, along with a copy of the terms and conditions of the competition, of Mr. J. Lindsay, Town Clerk, City-chambers, Glasgow. Deposit, £1 1s. See particulars in our issue of July 10.

* OCTOBER 31.—**St. Helens.**—POLICE BUILDINGS AND FIRE STATION.—The St. Helens C.B. invite competitive designs for the above buildings. Premiums, £100, £50, and £25.

JANUARY 15, 1915.—COLLEGE MEMORIAL LECTURE HALL.—Designs for the Alexander Thompson Travelling Studentship must be delivered by the above date. See advertisement in issue of January 30.

NO DATE.—**Southport.**—SCHOOL AND OFFICES.—The Southport E.C. invite competitive designs for a technical school and education offices. See advertisement in our issue of July 10.

* NO DATE.—DRAWINGS OR PHOTOS.—Messrs. W. E. Whiteside & James Caslake, Ltd., offer prizes for examples of metal work.

Contracts.

BUILDING AND PAINTING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

JULY 20.—**Bargoed.**—CLUB.—The erection of a new club at Gilfach, Bargoed, Glamorgan, for the Trustees. Specification of Mr. D. J. Thomas, M.S.A., architect, Blackwood, Mon.

JULY 20.—**Cardiff.**—ADDITIONS.—Additions to the Institute for the Blind, Glossop-road, Cardiff. Quantities of Mr. David Morgan, architect, Charles-street-chambers, Cardiff. Deposit, £2 2s.

JULY 20.—**Chatham.**—PAINTING, ETC.—Cleaning and decorating the interior of St. John's Schools, New-road, Chatham. Specification at the Borough Surveyor's Office, Town Hall, Chatham.

JULY 20.—**Crosland Moor.**—BAKERY, ETC.—Erection of a bakery, stable, etc., in the Crosland Moor. Specifications of Messrs. C. P. Mallinson & Son, Market-place, Huddersfield.

JULY 20.—**Dorchester.**—PAINTING, ETC.—Painting, limewashing, and repairing at the Dorchester Church of England Schools. Particulars of Mr. H. O. Lock, Secretary to Managers, 24, High West-street, Dorchester.

JULY 20.—**Ealing.**—PAINTING.—For external and internal painting and decoration of Little Ealing, Lammas, and St. John's Schools. Specification from Mr. W. R. Hicks, A.M.Inst.C.E., Borough Engineer, Town Hall, Ealing, W. Deposit, 10s. 6d.

JULY 20.—**Glyncorrwg.**—HOUSES.—Erection of nineteen houses at Glyncorrwg for the Glyncorrwg Building Club. Quantities of Mr. W. Lewis, Secretary, Bridge House, Glyncorrwg.

JULY 20.—**Hebburn.**—CLASSROOMS, ETC.—Erection of two new classrooms, cloakrooms, etc., at the new Town Council infant school, Hebburn. Specifications of Mr. H. Paterson, Surveyor, at the Council Offices, Argyle-street, Hebburn. Deposit, £2.

JULY 20.—**Henley-on-Thames.**—PAINTING, ETC.—Internal painting and decorating of the whole of the interior of the technical buildings, Duke-street; external painting, repairs, etc., at the Lambridge pumping-station, including boiler and engine house, two cottages, etc.; and external painting, repairs, etc., at the Assenden sewerage outfall works, including cottage, stores, etc. Specifications of Mr. Ernest F. A. Pratt, Borough Surveyor, Town Hall.

JULY 20.—**Liverpool.**—PAINTING, ETC.—Painting, cleaning, etc., at Children's Homes, Richmond Lodge, Church-road, Wavertree. Mr. R. A. James, Clerk to the Guardians, 15, High Park-street, Liverpool.

JULY 20.—**Tynant.**—HOUSES.—Erection of 200 dwelling-houses at Tynant, near Llantwit Fardre, for the Great Western Colliery Company, Ltd. Specification of Messrs. Arthur Ll. Thomas & Gomer S. Morgan, architects and surveyors, 23, Gelliwastad-road, Pontypridd.

JULY 20.—**Winchester.**—BRIDGES.—Reconstruction and strengthening of four small bridges, situated on the Winchester and Botley main road, just south of St. Cross, near Winchester. Specification of Mr. W. J. Taylor, County Surveyor, The Castle, Winchester. Deposit, £1 1s.

JULY 21.—**Bermondsey.**—REPAIRS, ETC.—Repairing, pointing, painting, etc., to the exterior of the whole of the buildings, and certain repairing, painting, etc., to some of the interior of the buildings at the Ladywell Institution, Ladywell-road, Lewisham, S.E. Specification of Mr. E. Pitts Fenton, Clerk, No. 283, Tooley-street, S.E. Deposit, £10 banknote.

JULY 21.—**Cleator Moor.**—PAINTING.—For painting at the Central Bigrigg, Bowthorn-road, Frezington, Rowrah, Distington, Parton, and Whitehaven branches of the Cleator Moor Co-operative Society. Specifications at the branches.

JULY 21.—**Drighlington.**—WAREHOUSE.—Alterations, etc., and erection of cloth warehouse at New Mills, Drighlington, for the executors of the late T. and S. Barron. Quantities of Mr. T. A. Buttery, architect, Queen-street, Morley, and 1, Basinghall-square, Leeds.

JULY 21.—**Hirwain.**—HOUSES.—For building thirty-five houses at Hirwain, for the Bute Colliery Building Club. Specification of Mr. Alec. S. Cameron, architect, 1, Glanant-street, Aberdare.

JULY 21.—**Scalby.**—ADDITION.—For addition to Scalby School. Quantities of Mr. J. A. Iveson, architect, 14, Dean-road, Scarborough.

JULY 21.—**Tipton.**—RENOVATIONS, ETC.—The Tipton Education Committee invite tenders for renovation, painting, and repairs to several schools. Specifications from the architects, Messrs. Scott & Clark, Great Bridge.

JULY 22.—**Cleckheaton.**—CONVENIENCES.—For various works required in the erection of conveniences, etc., at the General Mechanics' Institute. Specifications of the Secretary, Mr. A. W. Crabtree.

JULY 22.—**Crosland Moor.**—ADDITIONS.—Erection of additions and alterations to the Crosland Moor Working Men's Club. Quantities of Messrs. Joseph Berry & Sons, architects, 3, Market-place, Huddersfield.

JULY 22.—**Kent.**—PAINTING AND REPAIRS.—For painting and repairs at Ashford, New Brompton, Sheerness, Sandwich, Seabrook, Sittingbourne, and Whitstable Police-stations, and Maidstone Court-house, for the Standing Joint Committee. Quantities of the County Architect, 86, Week-street, Maidstone.

JULY 22.—**Netherton.**—HOUSES AND STREETS.—Formation of streets and erection of seven dwelling-houses, South View-road, Netherton, for the South Crosland and Netherton Co-operative Society, Ltd. Quantities of Mr. Joe Ainley, architect, Chapel-street, Slaithwaite.

JULY 22.—**Ringwood.**—BRIDGE.—Partial reconstruction of stoning Bridge, situated at Ringwood. Specification of Mr. W. J. Taylor, County Surveyor, The Castle, Winchester. Deposit, £2 2s.

JULY 22.—**Tonbridge.**—BRIDGE.—Rebuilding of Five Oak Bridge, Tudely, near Tonbridge. Quantities of Mr. Frederick W. Ruck, County Architect, 86, Week-street, Maidstone.

JULY 22.—**Walsall.**—ELECTRIC POWER STATION.—Erection of electric power-station buildings on a site on the bank of the Wyrley and Essington Canal of the Birmingham Canal Navigations, near Raybould's Bridge, Birchills, Walsall. Quantities of the consulting engineer, Mr. E. M. Lacey, M.Inst.C.E., 12, Victoria-street, Westminster, London, S.W. Deposit, £5.

JULY 22.—**Warrington.**—REPAIRS.—Building repairs at the Union Offices, 67, Market-street, Earlestown, for the Warrington Board of Guardians. Specification from Mr. Arthur Bottomley, Clerk, Bewsey-chambers, Warrington.

JULY 22.—**Wincanton.**—HOSPITAL ADDITIONS.—The Wincanton Isolation Hospital Committee invite tenders for the erection of a new ward block. Quantities of Mr. Arthur J. Pictor, architect, Bruton, Somerset. Deposit, £1 1s.

JULY 23.—**Aberystwyth.**—ALTERATIONS.—Alterations and additions to the Town Hall, at Queen's-square, Aberystwyth. Specifications of the Borough Surveyor, Smithfield-road.

JULY 23.—**Becknamillagh.**—SCHOOL.—Erection of national school. Specification of Mr. T. Doly, The Manse, Dromore.

* JULY 23.—**Bermondsey.**—REPAIRS, ETC.—The Bermondsey Guardians invite tenders for pointing, repairs, painting, etc.

JULY 23.—**Croydon.**—PAINTING.—External cleaning, painting, etc., of the Town Hall, Croydon. Specification of the Borough Engineer, Town Hall, Croydon.

JULY 23.—**Denbighshire.**—PAINTING.—For painting, colour-washing, etc., at the following schools:—Brymbo Vron, Brynteg Boys, Pentre Broughton Old Boys, Bwlchgwyn. Specifications of Mr. Walter D. Wiles, County Architect, 42a, High-street, Wrexham.

JULY 23.—**Devonshire.**—VARIOUS WORKS.—For various works at Broadwood Widger, Hartland, Hatherleigh, Lydford, Milton Abbot, Modbury, Plymstock, Stoke Fleming, Totnes Grove, Ugborough, and Westleigh Schools, for the Devon C.C. Specifications at the various schools.

* JULY 23.—**Guildford.**—TWENTY COTTAGES.—The Guildford B.C. invite tenders for erection of twenty cottages at Guildford.

JULY 23.—**Port Talbot.**—HOUSE.—Erection of a detached house at Gross, near Port Talbot, for Miss E. C. Talbot, of Margam Park. Quantities of Mr D. J. Jones, Commercial-buildings, Port Talbot. Deposit, £2 2s.

JULY 23.—**Rhymney.**—WARDS, ETC.—Erection of two new wards, operating-room, etc., at the Rhymney Cottage Hospital, Rhymney, Mon. Quantities of Mr. J. Llewellin Smith, architect and quantity surveyor, Aberdare. Deposit, £1 1s.

JULY 23.—**Risca.**—DRILL-HALL.—Alterations at the drill-hall, Risca, for the 2nd Mon. Battery R.F.A. (T.). Specifications from the architect, Mr. Alan H. Davies, M.S.A., Austin Friars-chambers, 26, Dock-street, Newport, Mon. Deposit, £1 1s.

JULY 23.—**Salendine Nook.**—VILLAS.—Erection of two villas, Salendine Nook. Quantities of Messrs. Lunn & Kaye, architects, Milnsbridge, and 14, John William-street, Huddersfield.

JULY 23.—**Stourport, etc.**—PAINTING.—Painting of the ironwork, etc., belonging to Stourport Bridge also Upton-on-Severn Bridge, over the River Severn, for the Worcestershire C.C. Specification from the County Surveyor, Shire Hall, Worcester.

JULY 23.—**Totnes.**—STUCCOING, ETC.—For cement stuccoing the fronts and painting of the cemetery lodge, for the Corporation. Specifications of Mr. A. Warren, Borough Surveyor, Totnes.

JULY 24.—**Copmanthorpe.**—ALTERATIONS, ETC.—Alterations, additions, etc., at the Council school, for the West Riding Education Committee. Quantities of the Education Architect, County Hall, Wakefield. Deposit, £1.

JULY 24.—**Darlington.**—HOME.—Erection of Church of England Waifs and Strays Home, Darlington. Quantities of Messrs. Joseph Potts & Son, 12, Eldon-square, Newcastle-on-Tyne. Deposit, £2 2s.

JULY 24.—**Dudley.**—PAINTING, ETC.—Painting and renovations at the Union Offices. Specification of Mr. Ernest Allen, Clerk to the Guardians, Union Offices, St. James'-road, Dudley. Deposit, 10s. 6d.

JULY 24.—**East Cowes.**—ALTERATIONS.—For alterations and repairs to East Cowes Barracks, Isle of Wight, for the Territorial Force Association. Quantities of Mr. R. H. P. Bevis, architect, Elm Grove-chambers, Southsea. Deposit, £2 2s.

* JULY 25.—**Brentwood.**—PAINTING AND CLEANING.—The Metropolitan Asylums Board invite tenders for painting and cleaning work.

JULY 25.—**Hastings.**—HOSPITAL.—Foundations and retaining walls, etc., for new hospital, for the Committee of the East Sussex Hospital, Hastings. Names to the architects, Messrs. John Saxon Snell & Stanley M. Spoor, 26, Great James-street, Bedford-row, London, W.C.

JULY 25.—**St. Martins.**—ENLARGEMENT.—The Managers invite tenders for an enlargement and alteration of the school at St. Martins. Quantities of Mr. Spaull, The Gables, Oswestry.

[Those with an asterisk (*) are advertised in this issue.]

BUILDING, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

JULY 25.—**Whitby.**—DEMOLITION, ETC.—Pulling down of old property to the south of the Cliff-street Council School, Whitby, the making-up of the playground, and concrete paving the same, for the North Riding of Yorkshire C.C. Specifications of Mr. J. C. Wrigley, Education Offices, Northallerton.

JULY 27. — **Blaby.** — PAINTING, ETC.—For tar-painting, whitewashing, etc., at the hospital for the Blaby, Wigston, and Oadby Joint Hospital Committee. Particulars from the Matron at the hospital.

* JULY 27.—**Canterbury and Sittingbourne.**—REPAIRS.—The Kent E.C. invite tenders for summer repairs.

JULY 27.—**Carlisle.**—PAINTING, ETC.—Painting and other works required to be done at the Carlisle, Stanwix, and Upperby Cemeteries. Specification of Mr. Henry C. Marks, M.Inst.C.E., City Engineer and Surveyor, 36, Fisher-street, Carlisle. Deposit, 10s, 6d.

JULY 27.—**Hemel Hempstead.**—COTTAGES.—Erection of fourteen cottages at Waterside, King's Langley, for the Hemel Hempstead R.D.C. Specifications of the Council's Surveyor, Mr. Thomas H. Lighbody, M.S.A., 20, Marlowes, Hemel Hempstead. Deposit, £1 1s.

JULY 27.—**Winchester.**—PAINTING, ETC.—External painting and repairs to the county offices, County Hall, Assize Courts, etc., The Castle, Winchester. Specification of Mr. W. J. Taylor, County Surveyor, The Castle, Winchester.

JULY 28.—**Arran.**—OFFICE.—The Commissioners of H.M. Works and Public Buildings invite tenders for the erection of Lamlash Customs and Excise Office and House, Arran. Quantities at H.M. Office of Works, 3, Parliament-square, Edinburgh. Deposit, £1 1s.

* JULY 28. — **Finsbury.** — ADAPTATION OF PREMISES.—The Commissioners of H.M. Works, etc., invite tenders for adaptation of premises.

JULY 28.—**Horsham.**—SCHOOL.—Erection of a proposed Council school on a site in Oxford-road, Horsham. Quantities of Mr. Haydn P. Roberts, F.R.I.B.A., County Education Architect, Thurloe House, High-street, Worthing. Deposit, £1 1s.

* JULY 28.—**Leyton.**—ADDITIONS, ETC.—The Leyton U.D.C. invite tenders for erection of additional offices and redecoration.

JULY 28.—**Manchester.**—OFFICES, ETC.—Erection of tramway offices and public conveniences at Chorlton-cum-Hardy, Manchester. Quantities of Mr. J. M. McElroy, General Manager, Corporation Tramways, 55, Piccadilly, Manchester. Deposit, £2 2s.

JULY 29.—**Abercarn.**—INSTITUTE.—Erection of a new institute at Abercarn, for the Trustees of the Abercarn Workmen's Institute Committee. Quantities of Messrs. A. F. Webb & D. J. Thomas, MM.S.A., architects, Blackwood. Deposit, £2 2s.

JULY 29.—**Feckenham.**—COTTAGES.—Erection of ten cottages at Astwood Bank for the Feckenham R.D.C. Specification of the architects, Messrs. Dicks & Waldron, Evesham. Deposit, £1 1s.

* JULY 29.—**Fetter-lane.**—ALTERATIONS.—The Commissioners of H.M. Works, etc., invite tenders for conversion of premises into a telephone exchange.

* JULY 29.—**Hornchurch.**—PAINTING.—The St. Leonard's (Shoreditch) Guardians invite tenders for painting.

JULY 30. — **Broadstone.** — ADDITIONS.—Alterations and additions to boiler shop, Broadstone, for the Midland Great Western Railway of Ireland Company. Specifications of the Chief Engineer, Broadstone. Deposit, £1 1s.

AUGUST 1. — **Bromley.** — COTTAGES.—Erection for the Bromley R.D.C. of eight cottages at Knockholt, Kent. Specification of the architects, Messrs. Potter & Harvey, 49, London-road, Sevenoaks, Kent. Deposit, £1 1s.

AUGUST 4. — **Driffield.**—BRIDGE.—Taking down and rebuilding in reinforced concrete of the brick bridge over the Nafferton drain at Brigham for the Driffield R.D.C. Specifications of Mr. T. Casson Beaumont, Surveyor.

* AUGUST 5. — **Tidworth.** — WORKSHOP AND STORES.—The Secretary of State for War invites tenders for erection of a fitters' shop and explosive store and laboratory.

AUGUST 10. — **Glasgow.** — APPROACH.—Mason, concrete, etc., work required in connection with the proposed new approach to the Kelvingrove Art Galleries for the Corporation. Specifications at the Office of Public Works, 64, Cochrane-street. Deposit, £1 1s.

* AUGUST 17.—**Tidworth.**—HOSPITAL BUILDING.—The Secretary of State for War invites tenders for erection of a ward and administrative block.

* AUGUST 20. — **Stevenage.**—SPECIAL SUBJECTS CENTRE. — The Hertfordshire C.C. E.C. invite tenders for a new special subjects centre.

* AUGUST 27. — **Bromley Common, Kent.**—BEDROOMS FOR NURSES. — The Bromley and Beckenham Joint Hospital Board invite tenders for a permanent building for bedrooms for nurses at Hospital for Infectious Diseases.

NO DATE. — **Cardigan.** — PAINTING.—Painters' work at Llanarth, Cilcenin, and Aberayron (National) schools, for the Cardigan County Education Committee. Specifications of Mr. Geo. Dickens-Lewis, County Architect, Aberystwyth.

NO DATE. — **Cardigan.** — REPAIRS, ETC. — (1) Llanon, new cloakroom and general repairs; (2) Cilcenin, general repairs to school and house; (3) Mydroilyn, new coalhouse, for the Cardigan County Education Committee. Specifications of Mr. Geo. Dickens-Lewis, County Architect, Aberystwyth.

NO DATE.—**Cookfield.**—ADDITIONS.—For additions to Cookfield Vountary School, for the Managers. Specification of Mr. S. Naish, architect, 7, Hatton-street, Bury St. Edmund's.

NO DATE.—**Craghead.**—HOUSES.—Erection of fourteen houses at Craghead, for Messrs. Thos. Hedley & Bros. Quantities of Mr. J. Wm. Rounthwaite, A.R.I.B.A., 13, Mosley-street, Newcastle-on-Tyne.

* NO DATE.—**Near Broadstairs.**—EIGHT COTTAGES.—Tenders are invited for erection of eight cottages.

NO DATE.—**Otley.**—COTTAGES.—Erection of a pair of cottages at Leathley, near Otley. Names to Mr. W. P. Richardson, Farnley Estate Office, Otley.

NO DATE.—**Pontefract.**—Various works in Pontefract, for the University College, Oxford. (1) Pulling down three cottages in Newgate and Blue Factory, and the erection of four houses on site; (2) pulling down six cottages in yard, and erection of four houses on same site; (3) alterations and additions to shop in Beastfair, occupied by Mr. W. Sweeting; (4) new out-offices and repairs and alterations to existing sixteen houses in Crown and Anchor-yard. Names to Messrs. Garside & Pennington, architects, Pontefract and Castleford.

NO DATE.—**Salford.**—WAREHOUSES, ETC.—Erection of a large ferro-concrete warehouse, office block, garage, caretaker's house, and boundary walls in Salford. Names to Messrs. Maxwell & Tuke, architects and engineers, 25, Brasenose-street, Manchester.

FURNITURE, MATERIALS, etc.

JULY 20.—**Preston.**—GRANITE SETTS.—Supply and delivery of about 2,000 tons of 4-in. by 5-in. granite setts, delivered at Feniscowles Station, for the Lancashire C.C. Specification from Mr. W. H. Schofield, County Surveyor, County Offices, Preston.

JULY 22.—**Leigh.**—GRANITE SETTS.—Supply of 1,700 tons of granite setts. Forms of tender from Mr. Tom Hunter, Borough Engineer, Town Hall, Leigh, Lancashire.

ENGINEERING, IRON, AND STEEL.

JULY 17.—**Whitstable.**—MOTORS.—Supply and erection of two 10-b.h.p. and two 20-b.h.p. electric motors, etc., at Sewage Pumping Station of the U.D.C. Specifications of Messrs. Strachan & Weekes, Civil Engineers, 9, Victoria-street, Westminster, S.W. Deposit, £2 2s.

JULY 20.—**Dartford.**—TELEPHONES, ETC.—Installation of additional telephones, extension bells, etc., at Joyce Green Hospital, near Dartford, for the Metropolitan Asylums Board. Specification at the Office of the Board, Embankment, E.C. Deposit, £1.

JULY 20. — **Dublin.**—STREET LAMP PILLARS.—Supply of street lamp pillars and brackets, to be supplied in lots of 100 when required. Form of tender of Mr. Henry F. Cotton, Superintendent of Public Lighting, Tara-street, Dublin. Deposit, 10s.

JULY 20.—**Edinburgh.**—PIPE WORK.—Supply of extension steam and exhaust pipe work at M'Donald-road Station, for the Corporation. Specification at the Engineer's Office, Dewar-place, Edinburgh. Deposit, £1 1s.

JULY 20. — **Rotherham.**—TANK.—For cast-iron water-tank, 16 ft. 6 in. by 21 ft. 8 in. in depth, for the Corporation. Specification of Mr. E. B. Martin, Waterworks Engineer, Town Hall, Rotherham.

JULY 21.—**Manchester.**—BOILERS.—Supply of two steel boilers for heating purposes, for the Manchester Corporation Tramways. Specifications of Mr. J. M. McElroy, General Manager, Tramways Department, 55, Piccadilly, Manchester.

JULY 21.—**Warrington.**—ELECTRIC APPARATUS.—(1) E.H.T. switchboard feeder panel; (2) L.T. switchboard feeder panel. Specifications of Mr. F. V. L. Mathias, Borough Electrical Engineer, Howley, Warrington. Deposit, £1 1s. in each case.

JULY 21.—**Warrington.**—STEEL POLES.—Steel tramway poles, for the Corporation. Specification from Mr. F. V. L. Mathias, Borough Electrical and Tramways Engineer, Howley, Warrington. Deposit, £1 1s.

JULY 22.—**Cardiff.**—GASHOLDER.—Construction of a guide-framed four-lift gasholder, 3,000,000 cubic ft. capacity, to be erected at the Grangetown Gasworks, Cardiff, for the Cardiff Gas Light and Coke Company. Particulars of Mr. George Clarry, General Manager and Secretary, Gas Offices, Cardiff. Deposit, £2 2s

JULY 22. — **Potterspury.** — ENGINE-SHED, ENGINE, ETC.—Provision and erection of a 3-h.p. petrol engine, a galvanised-iron engine-shed, and well gearing, etc., at their waterworks, in the parish of Hartwell, for the R.D.C. of Potterspury. Specifications of Mr. J. B. Fairchild, Surveyor to the Council, Potterspury.

JULY 23.—**Belfast.**—JETTY.—The Belfast Harbour Commissioners invite tenders for the construction of (*a*) jetty, about 550 ft. in length and 50 ft. in width, in reinforced concrete, and other collateral works, at the south end of the Musgrave Channel; and (*b*) alternative tenders for the construction of a jetty, about 550 ft. in length and 50 ft. in width, in timber work, and other collateral works. Specification of the Harbour Engineer, Mr. W. Redfern Kelly, M.Inst.C.E. Deposit, £6 6s.

JULY 27. — **Cambridge.** — STEAM APPARATUS.—For replacing steam piping and steam cooking apparatus and boiler at the Workhouse, Chesterton, Cambridge. Particulars of Mr. A. Wild, Master of the Workhouse.

ROAD, SANITARY, AND WATER WORKS.

JULY 20. — **Dalton.** — SEWER.—For providing and laying 180 yds. of 6-in. stoneware pipe sewer for the Rotherham R.D.C. Quantities of Mr. B. Hey, Engineer to the Council, Imperial buildings, Rotherham.

JULY 20.—**Fife.**—SEWERS.—Providing, laying, and jointing about 1,320 yds. of fireclay and cast-iron sewers, etc., for the County of Fife Dunfermline District Committee. Quantities of Messrs. Warren & Stuart, civil engineers, 94, Hope-street, Glasgow. Deposit, £1 1s.

JULY 20.—**Gosforth.**—PAVING.—Taking-up the existing asphalt footway in Kenton-road and laying new flagged footway. Particulars from the Engineer and Surveyor to the Council, Mr. Geo. Nelson, A.M.Inst.C.E., Council Offices.

JULY 21.—**Acton.**—STREET WORKS.—Making-up back passages in Gladstone-road and Hamilton-road. Quantities of the Surveyor, at the Council Offices.

JULY 21. — **Barnoldswick.** — STREET WORKS.—For street works in three roads, for the Barnoldswick U.D.C. Quantities of Mr. W. Ellis, Engineer and Surveyor, Town Hall, Barnoldswick.

JULY 21.—**Brandon.**—STREET WORKS.—Making-up of the following streets at Esh Winning:—(1) Back Durham-road (Albert-terrace) and Bungalow-terrace and northern approaches to Evenwood and Burnell roads; (2) south approach to Burnell-road; (3) Back Brandon-road and side streets, for the Brandon and Byshottles U.D.C. Particulars of Mr. Geo. G. Donkin, Surveyor, Langley Moor.

JULY 21.—**Ealing.**—STREET WORKS.—Making-up Boileau-road (portion), Golf-road, Station-road (portion), Waldegrave-road, Woodstock-avenue, Weymouth-avenue (portion), Meadvale-road (portion). Quantities from Mr. W. R. Hicks, A.M.Inst.C.E., Borough Engineer, Town Hall, Ealing, W. Deposit, 10s. 6d. for each road.

JULY 21.—**Gellygaer.**—ROADS.—(1) Reforming, ballasting, and laying tar-macadam, etc., at Hanbury-road, Bargoed (about 6,000 super yds.); (2) excavation, ballasting, metalling, and fencing Trosnant-road, Gellygaer (about 2,000 super. yds.); (3) ballasting, metalling, and paving at Garth-terrace, Bedlinog, and relaying paving at Grove-terrace and Bedw-road. Specifications of Mr. F. Read, A.M.Inst.C.E., Engineer and Surveyor, Council Offices, Hengoed, Glam.

JULY 21. — **Halifax.**—ROADS. — Widening of Whitegate-road from Rosebery-avenue to Phoebe-lane. Specification of Mr. James Lord, M.Inst.C.E., Borough Engineer, Town Hall, Halifax. Deposit, £1.

JULY 21.—**Killaloe.**—WATER SUPPLY.—For construction of waterworks at Killaloe for the Scariff R.D.C. Specification of Mr. J. Holohan, Clerk, Scariff, Co. Clare. Deposit, £3.

JULY 21.—**Macclesfield.**—SEWERS.—Laying a surface-water sewer in Blakelow-road, and a sewer from Peter-street to Bond-street to a point near Henderson-street. Quantities of the Borough Surveyor.

JULY 21.—**Salford.**—STREET WORKS.—Sewering, paving, and flagging works, for the Corporation. Quantities from the Borough Engineer, Town Hall, Salford.

JULY 21.—**South Kirkley.**—STREETS.—Construction of new streets, sewers, etc., at South Kirkby, near Wakefield, for the South Kirkby, Featherstone, and Hemsworth Collieries, Ltd. Names to Messrs. Garside & Pennington, architects, surveyors, etc., Pontefract and Castleford.

JULY 22.—**Birmingham.**—STREET WORKS.—Reconstruction of Abbot's-road, King's Heath, St. Edward's-road, Bournbrook, and Springfield, Erdington. Quantities of Mr. Henry E. Stilgoe, M.Inst.C.E., City Engineer and Surveyor, The Council House, Birmingham. Deposit, £2.

JULY 22.—**Glasgow.**—PAVING.—Pavior work to roadway at Kelvinhaugh Refuse Despatch Works, Gilbert-street. Specifications of Mr. W. Greig, Superintendent of Cleansing, 20, Trongate.

JULY 22.—**Manchester.**—DRAIN.—Laying of a new length of main drain at schools at Swinton, near Manchester, for the Guardians. Quantities of Mr. A. J. Murgatroyd, architect, 23, Strutt-street, Manchester. Deposit, 10s. 6d.

JULY 23.—**Oldham.**—STREET WORKS.—Making-up Littlebank-street, Winter-street, Busk-road from Bamford-street to Osborne-street, Mill Gate, Suffolk-street from Block-lane to Union-street, Clarksfield-road from Nos. 76 to 114, Clarksfield-road. Quantities at the Borough Surveyor's Office.

JULY 23. — **Richmond.** — STREET WORKS.—Making up North-road (part of), for the Richmond T.C. Particulars of Mr. J. H. Brierley, Borough Surveyor, Town Hall, Richmond, Surrey. Deposit, £1 1s.

JULY 23. — **Stockport.** — STREET WORKS.—Making-up Northgate-road, Adelaide-road, Chapel-street, Chatham-street, Chelmsford-road, and passages. Specification of Mr. John Atkinson, A.M.Inst.C.E., Borough Surveyor, Town Hall, Stockport.

JULY 24. — **Liverpool.** — WATERWORKS.—Construction at the Chorley filter-bed of an additional concrete clear-water tank, with concrete and steel roof, capacity 330,000 gallons. Specification at the Water Engineer's Office, Alexandra-buildings, 55, Dale-street, Liverpool. Deposit, £2 2s.

JULY 24.—**Shrewsbury.**—WELL.—Trial bore and sinking a shallow well at Crowmoor, Shrewsbury, for the Salop C.C. Schedule of the County Land Agent. Mr. W. J. Pulford, County-buildings, Shrewsbury.

* JULY 25.—**Tooting.**—ROAD REPAIRS.—The Metropolitan Asylums Board invite tenders for repairs to roads.

[Those with an asterisk (*) are advertised in this issue.]

ROADS, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

JULY 25.—**Exmouth.**—MARINE DRIVE.—(1) Supply of creosoted timber piling; (2) pile-driving, sea defence works, roadmaking, drainage, and all incidental works. Quantities of Mr. Samuel Hutton, Engineer and Surveyor, Council Offices, Exmouth. Deposit, £2 2s.

JULY 25.—**Exmouth.**—WORKS ON MARINE DRIVE.—(1) Supply of cast-iron pipes, laying steel tube through tunnel; (2) construction of tennis courts, and alteration of pavilion. Specifications of Mr. S. Hutton, Engineer, Council Offices, Exmouth. Deposit, £2 2s.

JULY 25.—**Festiniog.**—ROADS.—Widening of the main road at Rhiw Ffynon, near Festiniog. Specification of Mr. E. Vaughton, County Surveyor, Arthog, Dolgelley.

JULY 25.—**Rothes.**—ROAD.—Lifting and re-constructing part of Burnside-street, Rothes. Specifications of Mr. Archd. Robb, Burgh Surveyor.

* JULY 25.—**Tooting.**—ROAD REPAIRS.—The M.A.B. invite tenders for repairing, etc., to roads.

JULY 26.—**Great Harwood.**—STREET WORKS.—Making-up certain streets, for the U.D.C. Specifications of Mr. A. H. Dunkin, Surveyor, Town Hall, Great Harwood.

JULY 27.—**Bathgate.**—WATER-MAIN.—Providing and laying about 1 mile of 12-in. and 9-in. fireclay pipes, together with intakes, manholes, and other relative works, for the Bathgate District Committee. Specification of the engineers, Messrs. J. & A. Leslie & Reid, C.E., 72a, George-street, Edinburgh. Deposit, £1.

JULY 27.—**Carlisle.**—SANITARY.—Alteration to sanitary arrangements at the police-station, for the Corporation. Particulars of Mr. H. C. Marks, City Engineer, 36, Fisher-street, Carlisle.

JULY 27.—**Tendring.**—WATER MAIN.—Supplying and laying about 2,190 yds. of 3-in. cast-iron water main, and other works in connection therewith, in the parish of St. Osyth, for the Tendring R.D.C. Specification from the Engineer, Mr. Sydney Francis, A.M.Inst.M.E., Town Hall-buildings, Clacton-on-Sea. Deposit, £1 1s.

JULY 28.—**Watford.**—STREET WORKS.—Making-up Oxley-avenue, Oxley-street, and Ashley-road, for the U.D.C. Quantities of Mr. D. Waterhouse, Surveyor, Council Offices, Watford. Deposit, £1.

JULY 29.—**Cannock.**—FILTERING MEDIA.—Supply and placing in filters of 3,400 cubic yds. of cold-blast furnace slag and 1,845 yds. of granite filling. Specification of Mr. R. Blanchard, Surveyor, Council Offices, Cannock. Deposit, £2.

JULY 29.—**Llantrisant.**—STREET WORKS.—Making-up eight streets and passages for the Lantrisant and Llantwit Fardre R.D.C. Quantities from Mr. Thomas Saunders, Surveyor, School-street, Pontyclun, Glamorgan. Deposit, £2 2s.

JULY 31.—**Earby.**—SEWAGE WORKS.—Extension of the sewage-disposal works at Earby, for the Earby U.D.C. Quantities of Mr. Jas. E. Aldersley, Engineer and Surveyor, Council Offices, Earby. Deposit, £2 2s.

JULY 31.—**Porthcawl.**—SEWERS.—Construction of certain lengths of stoneware and iron sewers, concrete tube sewers of 30 in. in diameter, etc., also the construction of a sea outfall, to be laid through the rock foreshore, for the Porthcawl U.D.C. Quantities of the engineers, Messrs. J. Taylor & Sons, Caxton House, Westminster, S.W. Deposit, £5.

AUGUST 1.—**Blackrock.**—ROADS.—Making-up Temple-road, in the urban district of Blackrock. Specifications of the Town Clerk, Blackrock, Co. Dublin. Deposit, £1 1s.

AUGUST 4.—**Oldham.**—LAYING-OUT.—Making of bowling greens, tennis courts, and laying-out of grounds at Hudson Fold. Particulars of the Borough Surveyor.

AUGUST 7.—**Runcorn.**—SEWERAGE.—For Grappenhall, Latchford Without, and Thelwall sewerage works for the Runcorn R.D.C. Quantities of the engineers, Messrs. James Diggle & Son, 14, Victoria-street, Westminster, S.W., and Hind Hill-street, Heywood, Lancashire. Deposit, £5.

* AUGUST 13.—**Fleet.**—SEWAGE AND SEWERAGE DISPOSAL WORKS.—The Fleet U.D.C. invite tenders for construction of sewerage and sewage disposal works.

SEPTEMBER 2.—**Lanark.**—SEWERAGE WORKS.—The District Committee of the Middle Ward of the County of Lanark invite tenders for the construction of sewage tanks, access road, and relative works at Merryton and Braehead, and an outfall sewer from London-street, Larkhall. Specification of Mr. W. L. Douglass, M.Inst.C.E., District Engineer, District Offices, Hamilton. Deposit, £1.

Public Appointments.

* JULY 20.—CLERK OF WORKS.—The Surrey Standing Joint Committee invite applications for the above post. Salary, £3 13s. 6d.

* JULY 31.—CLERK OF WORKS.—The Denbigh R.C. invite applications for the above post.

* AUGUST 8.—INSTRUCTOR IN PLUMBING.—The Kingston-upon-Thames R.C. invite applications for the above post. Salary, 15s. per evening.

* NO DATE.—CLERK OF WORKS.—The Manchester Corporation River Committee invite applications for the above post. Salary, £3 3s. per week.

Auction Sales.

* JULY 18.—**Tilbury (Essex).**—Messrs. Balls & Balls will sell by auction, at Lion Hotel, Cambridge, a freehold field of arable land.

* JULY 20.—**South Croydon.**—Messrs. Hooker & Webb will sell by auction on the premises, building material.

* JULY 21.—**Wallington.**—Messrs. Knight, Frank, & Rutley will sell by auction, at 20, Hanover-square, W., the freehold of Elm-grove Estate.

* JULY 22.—**Slough.**—Mr. Mason will sell by auction, at the Mart, a freehold estate.

* JULY 27.—**Chiswick.**—Messrs. Elliott, Son, & Boyton will sell by auction, at the Mart, building land.

* JULY 27.—**Goswell-road.**—Messrs. Weatherall & Green will sell by auction, at the Mart, building sites.

* JULY 29.—**Westminster.**—Messrs. Fuller, Horsey, Sons, & Cassell will sell by auction, on the premises, plant of various kinds.

* JULY 29.—Messrs. Churchill & Sim will sell by auction, at the Great Hall, Winchester House, Old Broad-street, E.C., an assortment of deals, battens, boards, timbers, etc.

[Those with an asterisk (*) are advertised in this issue.]

LAW REPORTS.

KING'S BENCH DIVISION: DIVISIONAL COURT.
(Before Justices A. T. LAWRENCE and ATKIN.)

What is a "New Building"?

THIS was a motion moved *ex parte*, on behalf of Messrs. Hoare & Co., owners of the "Seven Stars" public-house, Footscray, Kent, for a *rule nisi* directed to the Footscray District Council, directing them to consider and approve of certain building plans.

Counsel said that under the Public Health Act, sect. 158, the Council were required to approve of building plans within a month after delivery, provided they were correct. In this case the owners of the "Seven Stars" had had a portion of their building pulled down and had re-erected it, leaving a narrow strip of the old building standing. The usual plans were sent in to the Footscray Council, together with a mass of detail as to the building to be erected, and these the Council refused to pass, and the only information his clients could get was that they were not in accordance with the by-laws. Although they tried every way, they could not discover what the Council's particular objection was. Mr. Poyser, who appeared on behalf of Messrs. Hoare Co., stated that his clients proceeded to build, as they had a right to do under the Act, at this risk: that if it turned out subsequently that in building they had violated the by-laws, there were penalties, and they could be ordered to pull the building down, so that it was a matter of peril for them to go on without the plans being approved. Eventually the Council took out five summonses against them for building in breach of the by-laws. A number of them were dismissed, and others were adjourned, and eventually the latter were withdrawn. Later they were met by further summonses, which charged them with violating the by-laws in not sending in plans of a new building that they intended to erect and not having them approved. His clients discovered that the Council took up the attitude that, although the portion of the house that they were going to re-erect was a new building in one sense, the whole place must be treated as a new building, and the plans must contain not only all that the by-laws required with regard to the portion that they intended to re-erect, but must contain similar details with regard to the old portions of the building that were to remain standing. The matter was tried by the local justices, who came to the conclusion that the new building only was the portion to be re-erected, and dismissed the summons; but, unfortunately for his clients, a case was stated, and the matter went up to a Divisional Court. There it was held that the whole building under these circumstances did become a "new building" within the meaning of the Act, and therefore the requirements of the local Council were correct. This was a final decision, there being no appeal, and his clients were bound to accept it. It appeared that in this old house there was a bit in front that was in advance of what Counsel might call the building line, and that had been the root of the trouble. This was an old-fashioned house that had been standing there for nearly a century, and they left that piece standing, and when the Court decided that they must send in plans of the old as well as the new portion, they did so, and they now came to their Lordships because the Council had refused to pass them, merely stating that they were not in accordance with the by-laws. Now it appeared the Council's attitude was that the Court, having decided that the whole of this formed a new building, his clients were liable for penalties for erecting a portion of the building in advance of the "building line," and that particular piece had been there for about one hundred years. It was said that they were subject to a penalty of £2 for every day that they did not get rid of the offence.

Mr. Justice Lawrence said that Mr. Poyser could take a rule, but it would be at his clients' risk.

Builder and the Insurance Act: Men's Unstamped Cards.

AT the Worthing County Court, before his Honour Judge Mackarness, Mr. Ernest Pinker, a builder, of Worthing, was sued by the Board of Trade to recover 19s. 2d., workmen's contributions under the National Insurance Act.

Mr. J. C. Buckwell, solicitor, Brighton, appeared for the Board of Trade. He said that though the amount was comparatively small, the matter was one of considerable importance. The claim against the defendant was for payments due from him in respect of unemployment insurance under the National Insurance Act. Every workman in what was called an insured trade mentioned in the schedule, and including a builder and carpenter, had to be insured against unemployment, and in order to raise the funds 5d. per week had to be contributed by means of a stamp, 2½d. coming from the employer's pocket and 2½d. from the workman's pocket. If the employer did not stamp the cards he was liable, within three months, to prosecution before the local Bench, and after three months to be sued in the County Court for the amount he had neglected to provide in stamps. This was of importance to the general public, and a matter of general interest, and he asked the Court to grant the public some indemnity against the costs to which they had been put in pursuing their remedy under the section. The bulk of these contributions, practically one-half, for which they were suing were deducted by the defendant from the weekly wages of the workmen, and then the stamps were not put on, so that the defendant actually benefited to the extent of practically half the 19s. 2d. He had been remonstrated with by the Board of Trade and asked by the men to stamp their cards, because they realised how serious it was to them if their cards were not properly stamped and they happened to be thrown out of employment. It was a very serious matter to an unemployed workmen if he could not produce his card properly stamped when required. Defendant had not been harshly proceeded against. He was in default for between fifty and sixty payments, and the maximum penalty was £10 for each offence. Defendant had now paid the amount into Court, but only at the last moment, and the Board of Trade had had to prepare their case. It was a matter of public interest that the men should be protected, and were it not for this aspect of the case the Board of Trade for 19s. 2d. would hardly have gone to the extent to which they had now gone, and he asked that the costs should be allowed on the Scale B, that the country should in some degree be relieved of the costs by recovery from the defendant for what, after all was said and done, was "a dirty action"—to take the men's money and then not stamp their cards.

Evidence of two workmen were taken, who said that when they came to leave the defendant's employ they found that their insurance cards had not been stamped, in one case for fourteen weeks, and in the other for forty-two weeks.

His Honour agreed that the case was one of public interest, and that the Board of Trade were entitled to costs on the higher scale, and ordered accordingly.

OBITUARY.

Mr. J. H. Stones.

The death is announced of Mr. James Herbert Stones, of the firm of Messrs. Stones, Stones, & Atkinson, of No. 10, Richmond-terrace, Blackburn, aged fifty-eight years. Mr. Stones was a son of the late Mr. James Bradley Stones, of Salesbury, Lancs.; he served for two years as apprentice to his uncle, Mr. W. Stones, timber merchant; he then attended a course in the Zurich Polytechnic and entered the offices of Mr. Beaumont, F.R.I.B.A., of Manchester and London. He settled in practice in Blackburn (with offices, for a while, also in Liverpool) as an architect and surveyor about thirty-five years ago; in 1889 he was elected a Fellow of the Royal Institute of British Architects. He entered into partnership with Mr. W. G. Stones, under the style

of Messrs. Stones & Stones; that partnership was dissolved in 1910 (*London Gazette* of June 21 of that year). Mr. J. H. Stones was the architect of the Vicarage, Livesey; Messrs. Stones & Stones were the architects of—in Blackburn, and conjointly with Messrs. Briggs, Wolstenholme, & Thornely—the police-court and fire-station, in competition (illustrated in the *Builder*, December 22, 1900); fire-station, dwellings, etc., and the Higher Elementary Schools and swimming-baths (1905), at Blakey Moor, and the new municipal buildings, which comprise the police-station and offices, and the Sessions Courts, with a separate court for children, and public hall, now being built at Blakey Moor, for the Corporation of Blackburn; and of, in Blackburn, the Union Offices, Education Offices, the District Nursing Home, Longshaw Church; the Hall, St. Peter-street; the Lancashire and Yorks (branch) Bank, Darwen-street; and the Norfolk-street C.E. Schools at Mill Hill (1902). They were the architects of the electricity buildings and station, and the post-office, with the tenement offices, in Long and Sadler streets, Middleton, for the Corporation (1900-3); and the designs, conjointly with Mr. W. E. Sproat, of Glasgow, to which the first premium of £300 was awarded, of buildings for baths, tramways offices, etc., on the George's Dock site, for the Liverpool City Council (1903), in respect whereof the schemes were subsequently altered. Messrs. Stones & Stones and Mr. W. E. Sproat, as joint architects, won the second premium for the Sessions and Police courts, and fire-station, Sunderland, and Messrs. Stones & Stones and Mr. A. T. Butler, of Cradley Heath, divided the second premium in the competition for the Town Hall, Free Library, and other municipal buildings, Rawtenstall, eleven years ago.

Mr. J. Gillespie.

The death, at his residence, Brooklands, St. Andrews, after a long illness, is announced also of Mr. James Gillespie, aged sixty-five years, senior partner of the firm of Messrs. Gillespie & Scott, of No. 4, Queen's-gardens, St. Andrews, and Cupar. Mr. Gillespie, a native of Dunfermline, enjoyed an extensive practice in the county of Fife; he was a leading member of the Fife Territorial Association, as well as of the National Service League, and held the rank of major, with a decoration for service extending over thirty-five years. In 1897 Mr. Gillespie was appointed to be the architect for the St. Andrews University Medical Schools, erected in the grounds of St. Mary's College, of which the buildings include departments for anatomy, physiology, botany, and *materia medica*, with three laboratories, theatre, museum, lecture and private research rooms; and in February, 1902, for the enlargement, to provide 100 beds, of the Springfield Asylum, Cupar, for the Lunacy Board of Fife and Kinross, with a recent extension. The firm were the architects of the Municipal Buildings, Markinch (1898-9); the Parish Church Hall for 400 scholars, and the Boys' Brigade Hall, St. Andrews; the Hall, Coaltown, Balgornie; Monimail Free Church, at Bow of Fife; Fife Hospital, at a cost of £12,000; St. Leonard's School, St. Andrews; the Sheriff Court House, the Cottage Hospital, and the High School, Kirkcaldy; Church Hall for the parish church, Leslie, after the Renaissance style, with sittings for 300, and built of Dumfries red sandstone; Thornton Public School for 600 scholars (1904), with hall and eight classrooms; Rankeillor House, Montrave House, and the drill halls, with offices and ranges, for the Territorial Forces at Broomsknowl, Dunfermline, for the Highland Fife Royal Garrison Artillery, Leven, Cupar, and Cowdenbeath, with large hall, armoury, officers' rooms, etc., for the "D" Company, 7th Royal Highlanders. Mr. Gillespie is survived by his widow, and leaves a family of four sons and two daughters.

PATENTS.

APPLICATIONS PUBLISHED.*

10,564 of 1913.—James Thomas Garratt: Taps and cocks.

13,830 of 1913.—Richard Henry Gilleon, Pickles Townend, and Henry William Simpson: Saws or blades for cutting stone.

14,664 of 1913.—Harald Merrylees: Composition specially applicable for use as a non-conducting floor covering.

14,805 of 1913.—Charles Herbert Provis. Building construction.

16,797 of 1913.—Charles Andrew Newton, Richard Newton, and Henry Newton: Ventilation apparatus.

18,506 of 1913.—James Douglas Dunn: Gate hinges.

19,534 of 1913.—John Joseph Silk: Sashcord pulley fittings.

21,089 of 1913.—William Anderson: Ballcock cisterns for flushing water-closets.

21,256 of 1913.—Isaiah Platt: Means for fixing corrugated sheets to purlins or cross bars.

22,142 of 1913.—Hinrich Schmaljohann: Iron concrete hollow ceilings or floors made without use of a centering or scaffolding.

23,290 of 1913.—Benno Fischer: Door lock.

25,277 of 1913.—Folke Richard Hedman and Carl August Kilgren: Plates for walls.

25,575 of 1913.—Arthur William Rammage: Trough flooring or decking for bridges, buildings, etc.

26,993 of 1913.—Julius Heinrich Albert Wrissenberg: Reinforced concrete structures.

29,710 of 1913.—Otto Wilhelmi: Method of making concrete or reinforced concrete (ferro-concrete) piles.

506 of 1914.—Lawrence Freeman: Glazing bars, ridge cappings, skylights, and their manufacture.

8,231 of 1914.—Henry James Millerchip: Glazing bars for use in the construction of horticultural buildings and greenhouses.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

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*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

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Per 1000 Alongside, in River.	£ s. d.
Best Stocks	1 16 6
Picked Stocks for Facings	2 10 0

Per 1000, Delivered at Railway Depôt.

	£ s. d.		£ s. d.
Flettons	1 14 0	Best Blue Pressed Staffordshire	3 15 0
Best Fareham Red	3 12 0	Do. Bullnose	4 0 0
Best Red Pressed Ruabon Facing	5 0 0	Best Stourbridge Fire Bricks	4 0 0
GLAZED BRICKS—			
Best White, Ivory, and Salt Glazed Stretchers	12 7 6	Double Headers	14 17 6
		One Side and two Ends	18 17 6
Headers	11 17 6	Two Sides and one End	19 17 6
Quoins, Bullnose and 4½ in. Flats	15 17 6	Splays and Squints	17 7 6
D'bie Str'tch'rs	17 17 6		

Second Quality £1 10s. per 1000 less than best.

	s. d.	
Thames and Pit Sand	7 0	per yard, delivered.
Thames Ballast	5 9	" "
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STONE.

Per Ft. Cube.

	s. d.
BATH STONE—delivered on road waggons, Paddington Depôt	1 7½
Do. do. delivered on road waggons, Nine Elms Depôt	1 9½
PORTLAND STONE (20 ft. average)—	
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 4½
White Basebed, delivered on road waggons Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 6½

Per Ft. Cube, delivered at Railway Depôt.

	s. d.		s. d.
Ancaster in blocks	1 10	Closeburn Red Freestone	2 0
Beer in blocks	1 6	Red Mansfield Freestone	2 4
Greenshill in blocks	1 10	Talacre & Gwespyr Stone	2 4
Darley Dale in blocks	2 4		
Red Corsehill in blocks	2 3		

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Per Ft. Cube, Delivered at Railway Depôt.	s. d.
Scappled random blocks	2 10

Per Ft. Super., Delivered at Railway Depôt.

6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8
6 in. rubbed two sides ditto, ditto	2 6
3 in. sawn two sides slabs (random sizes)	0 11½
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7
½ in. to 2 in. ditto, ditto	0 6

HARD YORK—

Per Ft. Cube, Delivered at Railway Depôt.	s. d.
Scappled random blocks	3 0

Per Ft. Super., Delivered at Railway Depôt.

6 in. sawn two sides landing to sizes (under 40 ft. super.)	2 8
6 in. rubbed two sides ditto	3 0
3 in. sawn two sides slabs (random sizes)	1 2
2 in. self-faced random flags	0 5

SLATES.

Per 1000 of 1200 at Railway Depôt.

	£ s. d.		£ s. d.
In. In. 20 x 10 best blue Bangor	13 2 6	In. In. 20 x 10 best Eureka unfading green	15 17 6
20 x 12 ditto	13 17 6	20 x 12 ditto	18 7 6
20 x 10 1st q'lity ditto	13 0 0	18 x 10 ditto	13 5 0
20 x 12 ditto	13 15 0	16 x 8 ditto	10 5 0
16 x 8 ditto	7 5 0	20 x 10 permanent green	11 12 6
22 x 10 best blue Portmadoc	12 12 6	18 x 10 ditto	9 12 6
16 x 8 ditto	6 12 6	16 x 8 ditto	6 12 6

TILES.

At Railway Depôt.

	s. d.		s. d.
Best plain red roofing (per 1000)	42 0	Best "Hartshill" brand, plain sand-faced (per 1000)	45 0
Hip and Valley (per doz.)	3 7	Do. pressed (per 1000)	42 6
Best Broseley (per 1000)	50 0	Do. Ornamental (per 1000)	47 6
Do. Ornamental (per 1000)	52 6	Hip (per doz.)	4 0
Hip and Valley (per doz.)	4 0	Valley (per doz)	3 6
Best Ruabon red, brown, or brindle (Edw'ds) (pr1000)	57 6	Staffords. (Hanley) Reds or Brindled (per 1000)	42 6
Do. Ornamental (per 1000)	60 0	Hand-made sand-faced (per1000)	45 0
Hip (per doz.)	4 0	Hip (per doz.)	4 0
Valley (per doz)	3 0	Valley (per doz)	3 6

WOOD.

BUILDING WOOD.	At per standard. £ s. d.		£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	15 0 0	..	16 10 0
Deals: best 3 in. by 9 in.	15 0 0	..	16 0 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	12 10 0	..	13 10 0
Battens: best 2½ by 6 and 3 by 6	0 10 0		less than 7 in. and 8 in.
Deals: seconds	1 0 0		less than best
Battens: seconds	0 10 0		" "
2 in. by 4 in. and 2 in. by 6 in.	11 10 0	..	12 10 0
2 in. by 4½ in. and 2 in. by 5 in.	10 10 0	..	11 10 0
Foreign Sawn Boards— 1 in. and 1½ in. by 7 in.	0 10 0		more than battens.
¾ in.	1 0 0		"
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 5 0 0	..	6 5 0
Seconds	4 10 0	..	5 0 0
Small timber (8 in. to 10 in.)	3 17 6	..	4 0 0
Small timber (6 in. to 8 in.)	3 5 0	..	3 10 0
Swedish balks	2 12 6	..	3 0 0
Pitch-pine timber (30 ft. average)	7 0 0	..	8 0 0
JOINERS' WOOD.	At per standard.		
White Sea: first yellow deals, 3 in. by 11 in.	26 0 0	..	27 0 0
3 in. by 9 in.	24 0 0	..	25 0 0
Battens, 2½ in. and 3 in. by 7 in.	18 10 0	..	19 10 0
Second yellow deals, 3 in. by 11 in.	21 10 0	..	22 10 0
Do. 3 in. by 9 in.	20 0 0	..	21 0 0
Battens, 2½ in. and 3 in. by 7 in.	15 0 0	..	16 0 0
Third yellow deals, 3 in. by 11 in. and 9 in.	16 0 0	..	17 0 0
Battens, 2½ in. and 3 in. by 7 in.	14 0 0	..	15 0 0
Petersburg: first yellow deals, 3 in. by 11 in.	23 0 0	..	24 0 0
Do. 3 in. by 9 in.	20 0 0	..	21 0 0
Battens	15 0 0	..	16 0 0
Second yellow deals, 3 in. by 11 in.	17 10 0	..	18 10 0
Do. 3 in. by 9 in.	16 0 0	..	17 0 0
Battens	12 10 0	..	13 10 0
Third yellow deals, 3 in. by 11 in.	14 0 0	..	15 0 0
Do. 3 in. by 9 in.	13 10 0	..	14 10 0
Battens	11 10 0	..	12 10 0
White Sea and Petersburg— First white deals, 3 in. by 11 in.	16 10 0	..	17 10 0
First white deals, 3 in. by 9 in.	14 10 0	..	15 10 0
Battens	13 0 0	..	13 10 0
Second white deals, 3 in. by 11 in.	14 10 0	..	15 10 0
Second white deals, 3 in. by 9 in.	13 0 0	..	14 0 0
Battens	12 0 0	..	12 10 0
Pitch-pine: deals	28 0 0	..	30 0 0
Under 2 in. thick extra	0 10 0	..	1 0 0
Columbian or Oregon Pine, best quality	24 0 0	..	26 10 0
Yellow Pine—First, regular sizes	50 0 0		upwards.
Oddments	35 0 0		"
Seconds, regular sizes	36 0 0		"
Oddments	31 0 0		"
Kauri Pine—Planks per ft. cube	0 6 6	..	0 7 6
Danzig and Stettin Oak Logs—Large, per ft. cube	0 3 0	..	0 3 9
Small " "	0 2 6	..	0 3 0
Wainscot Oak Logs, per ft. cube	0 8 0	..	0 10 0
Dry Wainscot Oak, per ft. super. as inch	0 0 10	..	0 1 2
¼ in. do. do.	0 0 9	..	0 1 0
Dry Mahogany — Honduras, Tabasco, per ft. super. as inch	0 0 10	..	0 1 3
Selected, Figury, per ft. super. as inch	0 1 6	..	0 2 6
Cuba Mahogany	0 1 4	..	0 2 6
			upwards.
Dry Walnut, American, per ft. super. as inch	0 0 10	..	0 1 2
French, "Italian," Walnut	0 0 10	..	0 1 4

WOOD (*Continued*).

JOINERS' WOOD (*Continued*)—	£	s.	d.		£	s.	d.
Teak, per load (Rangoon or Moulmein)	25	0	0	..	31	0	0
Do., do. (Java)	22	0	0	..	25	0	0
American Whitewood planks, per ft. cube	0	6	0	..	0	7	0
Prepared Flooring, etc.—			Per square.				
1 in. by 7 in. yellow, planed and shot	0	14	6	..	0	18	0
1 in. by 7 in. yellow, planed and matched	0	14	9	..	0	18	0
1¼ in. by 7 in. yellow, planed and matched	0	17	6	..	1	3	0
1 in. by 7 in. white, planed and shot	0	14	0	..	0	16	0
1 in. by 7 in. white, planed and matched	0	14	3	..	0	16	6
1¼ in. by 7 in. white, planed and matched	0	16	6	..	0	18	6
¾ in. by 7 in. yellow, matched and beaded or V-jointed boards	0	12	6	..	0	15	0
1 in. by 7 in. „ „	0	15	0	..	0	18	6
1 in. by 7 in. white „ „	0	12	0	..	0	14	0
1 in. by 7 in. „ „	0	14	6	..	0	16	6

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London or delivered Railway Vans, per ton.						
	£	s.	d.		£	s.	d.
Rolled Steel Joists, ordinary sections	9	0	0	..	10	0	0
Compound Girders, ordinary sections	11	0	0	..	12	0	0
Steel Compound Stanchions	12	0	0	..	13	0	0
Angles, Tees, and Channels, ordinary sections	11	0	0	..	12	0	0
Flitch Plates	11	0	0	..	12	0	0
Cast Iron Columns & Stanchions, including ordinary patterns	8	10	0	..	9	0	0

METALS.

	Per ton, in London.						
	£	s.	d.		£	s.	d.
IRON—							
Common Bars	9	0	0	..	9	10	0
Staffordshire Crown Bars, good merchant quality	9	5	0	..	9	15	0
Staffordshire "Marked Bars"	11	0	0	..	—		
Mild Steel Bars	9	5	0	..	9	15	0
Hoop Iron, basis price	10	0	0	..	—		
„ „ Galvanised	17	10	0	..	—		
(* And upwards, according to size and gauge.)							
Sheet Iron Black—							
Ordinary sizes to 20 g.	10	5	0	..	—		
„ „ 24 g.	11	5	0	..	—		
„ „ 26 g.	12	15	0	..	—		
Sheet Iron, Galvanised, flat, ordinary quality—							
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	10	0	..	—		
Ordinary sizes to 22 g. and 24 g.	16	0	0	..	—		
Ordinary sizes to 26 g.	17	0	0	..	—		
Sheet Iron, Galvanised, flat, best quality—							
Ordinary sizes to 20 g.	18	10	0	..	—		
„ „ 22 g. and 24 g.	19	0	0	..	—		
Ordinary sizes to 26 g.	20	10	0	..	—		
Galvanised Corrugated Sheets—							
Ordinary sizes, 6 ft. to 8 ft. 20 g.	15	0	0	..	—		
Ordinary sizes, 22 g. and 24 g.	15	5	0	..	—		
Ordinary sizes, 26 g.	16	15	0	..	—		
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12	10	0	..	—		
Best Soft Steel Sheets, 22 g. & 24 g.	13	10	0	..	—		
Best Soft Steel Sheets, 26 g.	15	10	0	..	—		
Cut Nails, 3 in. to 6 in.	11	0	0	..	11	10	0
(Under 3 in., usual trade extras.)							

LEAD, &c.

	Delivered in London.						
	£	s.	d.				
LEAD—Sheet, English, 4 lb. and up	23	5	0	..	—		
Pipe in coils	23	15	0	..	—		
Soil pipe	26	15	0	..	—		
Compo pipe	26	15	0	..	—		
ZINC—Sheet—	In casks of 10 cwt.						
Vielle Montagne	28	0	0	..	—		
Silesian	27	10	0	..	—		
Zinc, in bundles, 1s. per cwt. extra.							
COPPER—							
Strong Sheet, per lb.	0	1	1	..	—		
Thin „ „	0	1	2	..	—		
Copper nails „ „	0	1	1	..	—		
Copper wire „ „	0	1	1	..	—		
BRASS—							
Strong Sheet „	0	1	1	..	—		
Thin „	0	1	2	..	—		
TIN—English Ingots „	0	1	7	..	—		
SOLDER—Plumbers' „	0	0	8	..	—		
Tinmen's „	0	0	11	..	—		
Blowpipe „	0	1	1	..	—		

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.*

Per Ft. Delivered.			
15 oz. thirds	2½d.	26 oz. fourths	3½d.
„ fourths	2d.	32 oz. thirds	5½d.
21 oz. thirds	3½d.	„ fourths	4½d.
„ fourths	3d.	Fluted Sheet, 15 oz.	3d.
26 oz. thirds	4½d.	„ 21 oz.	4d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.*

Per Ft. Delivered.	
¼ Rolled plate	2½d.
¼ Rough rolled and rough cast plate	2½d.
¼ Rough rolled and rough cast plate	3d.
Figured Rolled, Oxford Rolled, Oceanic, Arctic, Muffled, and Rolled Cathedral, white	4½d.
Ditto, tinted	5d.

* Not less than two crates.

OILS, &c.

		£	s.	d.
Raw Linseed Oil in pipes	per gallon	0	2	3
„ „ „ in barrels	„	0	2	4
„ „ „ in drums	„	0	2	6
Boiled „ „ in barrels	„	0	2	6
„ „ „ in drums	„	0	2	9
Turpentine in barrels	„	0	2	10
„ in drums	„	0	3	0
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		30	5	0
Red Lead, Dry	per ton	28	10	0
Best Linseed Oil Putty	per cwt.	0	9	0
Stockholm Tar	per barrel	1	12	0

VARNISHES, &c.

	Per gallon. £	s.	d.
Fine Pale Oak Varnish	0	8	0
Pale Copal Oak	0	10	6
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of Churches	0	14	6
Fine Elastic Carriage	0	12	9
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	10	0
Finest Pale Durable Copal	0	18	6
Extra Pale French Oil	1	1	0
Eggshell Flating Varnish	0	18	0
White Pale Enamel	1	4	0
Extra Pale Paper	0	12	0
Best Japan Gold Size	0	10	0
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	6
French and Brush Polish	0	10	0

TO CORRESPONDENTS.

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TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later* than 6 p.m. *on Wednesday*. [N.B.—We cannot publish tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.* unless in some exceptional cases and for special reasons.]

* Denotes *accepted*. † Denotes *provisionally accepted*.

BASINGSTOKE.—Erection of twenty-eight cottages in Cresbourne-lane, for the Corporation:—
Organ & Sons, Oxford* £6,062

BEDFORD.—The Corporation have accepted the following tenders for street works:—
Firbank-road, Patent Victoria Stone Co., Ltd., Bishopsgate-street, London, E.C., £296 8s. 7d.; Bridge-road, Mr. R. Jeakings, Hurst-grove, Bedford, £243; Hardwick-road, Mr. A. E. Palmer, Glenfield, near Leicester, £350 6s. 3d.; Conquest-road, Mr. R. Jeakings, Hurst-grove, £294 7s.; Hawkins-road, Mr. R. Jeakings, £294.

BIGGLESWADE.—For alterations to the Unionist Club, St. Andrews, for the Committee. Mr. T. Cockrell, A.M.Inst.C.E., architect, Bedford and Biggleswade:—

M. J. Allen	£530 0	M. & F. O. Foster	£446 2
C. D. Woodward	525 10	Chas. Wright, Langford*	426 4
Styles & Son	487 10		

BOSTON.—Erection of double-fronted cottage at East Fen, for the Corporation:—
J. Kime, Candlesby* £356

BRIGHTON.—Alterations at North-road Electricity Works, for the Corporation:—
G. Lynn & Sons* £1,834 10

BROMLEY.—For making up Somerset and Wiltshire Roads, Orpington, for the Bromley Rural District Council:—
Road Maintenance and Supply Co.* £771

BROMLEY.—For making up St. John's-road, Orpington, for the Bromley Rural District Council:—
J. Mowlem & Co.* £5,710

CANNOCK.—Road works in Stafford-road, for the Cannock Urban District Council:—
Tebb & Mottashaw £547

CANNOCK.—Construction of lavatories under the bandstand in the Market-place, for the Urban District Council:—
C. Linford, Cannock* £410 10 9

CANNOCK.—Construction of sewers, for the Urban District Council:—
Jukes & Co.* £1,200 9

CARLISLE.—For extension of buildings at the Central Electric Lighting Station, situate in James-street, for the Town Council. Quantities by Mr. Henry C. Marks, City Engineer and Surveyor, 36, Fisher-street, Carlisle:—
J. Laing & Son, Carlisle* £4,125 7 6

CHILDREY.—For structural alterations, additions, painting and decorating, together with sinking a well at the Wesleyan chapel school and cottages. Mr. Jno. W. Harris, surveyor, East Challow, Wantage:—
H. Bance £229 5 6
J. P. Barrett, West Hanney, Wantage 209 19 5
J. Kilminster, Stratton, nr. Swindon 208 13 8
† Accepted for work in chapel and schoolroom.
Accepted for work in cottages and sinking a well.

COLCHESTER.—For erection of house, four cottages and other buildings at the Asylum, for the Essex County Council:—
R. Beaumont & Sons*—Inspector's house, £415; cottages, £955; cowshed, etc., £570.

CROYDON.—For painting at the Borough Hospital, for the Corporation:—
F. Clutterbuck, Croydon* £142 1 3

CROYDON.—Supply of between 3,000 and 4,000 tons of cement for the Russell Hill Reservoir, for the Corporation:—
G. T. Hall, Ltd., Croydon* (per ton) £1 13 2

DONCASTER.—Erection of fence at Small Pox Hospital, for the Joint Hospital Board:—
H. Arnold & Sons, Doncaster* £268

FELLING.—For alterations at Felling Council School, for the Felling Education Committee. Mr. C. W. Hall, Architect, Council-buildings, Felling-on-Tyne:—

Brown	£479 10	Craven, Newcastle-on-Tyne*	£232 5
Revell	286 0		

GLASGOW.—For the digger and reinforced concrete work in connection with the erection of new electricity works at Dalmarnock Bridge. Mr. W. W. Lackie, electrical engineer, 75, Waterloo-street, Glasgow:—

P. & W. Anderson	B. McAlpine & Sons
R. C. Brebner & Co.	Norrison & Mason
J. Goldie & Sons, Ltd.	J. Train & Taylor
Kinnear, Moodie, & Co.	Wilson, Kinmond, & Marr

[The contract will total about £50,000.]

HIGH ONGAR.—For drainage works at High Ongar, for the Rural District Council:—
Wiffen & Son* £474 9 4

HOUGHTON.—Widening of Lady Anne Bridge, for the Rural District Council:—
G. Cairns, New Hemington* £438 5 7

LEWISHAM.—Reconstruction of drains at Jury-lane, for the Borough Council:—
S. T. Stevens* £170

LONDON.—For steam heating installation, laundry machinery, etc., at the Hammersmith Trade School for Girls, for the London County Council:—

Manlove, Alliott, & Co., Ltd.	£1,600 0
C. Bradford & Co.	1,545 0
Moorwood's, Ltd.	1,488 0
J. & F. May	1,475 0
G. & E. Bradley	1,470 0
W. Freer	1,450 0
W. G. Cannon & Sons, Ltd.	1,450 0
W. Watkin & Son	1,341 15
Brightside Foundry and Engineering Co., Ltd.	1,275 0
J. Cormack & Sons, Ltd.	1,208 0
E. Deane & Beal, Ltd., 3, Monument-street*	1,240 0
T. W. Vaughan & Co. (1914), Ltd.	1,211 0

LONDON.—Construction of extension in front of premises now occupied by Messrs. Holloway Bros., Ltd., of the river wall at the new County Hall site, for the London County Council:—

J. Cochrane & Sons, Ltd.	£29,803 6 9
Dick, Kerr, & Co., Ltd.	28,771 10 10
A. Fasey & Son	27,976 8 0
J. Mowlem & Co., Ltd.	26,787 14 0
Holloway Bros. (London), Ltd.	25,700 0 0
W. Muirhead & Co., Ltd.	24,984 9 0
Morrison & Mason, Ltd., Glasgow*	23,268 6 8

LONDON.—The London County Council accepted during the Whitsuntide recess the following tenders for heating works at Council Schools:—

Bethnal-green, N.E.—Heating.

Globe-road	Hayward Bros. & Eckstein, Ltd.	£760 0

Hackney, C.—Heating.

Wilton-road	W. G. Cannon & Sons, Ltd.	926 0

Islington, W.—Heating.

Gifford-street	T. S. Knight & Sons	1,170 0

Paddington, N.—Heating.

Paddington and Maida-vale High School	T. S. Knight & Sons	810 0
Emily-street	Cannon & Hefford	898 0

Wandsworth.—Heating.

Balham High-road	W. G. Cannon & Sons	907 0

Re-erection of an Iron Building, etc.

The "Furzedown"	W. Harbrow	1,120 0

Iron Building.

Magdalen-road	F. W. Fletcher	£440 1

LONDON.—The London County Council have accepted the following tenders for the painting and cleaning of schools:—

Battersea—Surrey-lane—Painting Interior.

W. Akers & Co., Ltd.	£681	R. S. Ronald, St. Ann's-hill, Wandsworth*	£624
W. Young	668		
Rice & Son	627		

Camberwell, N.—Mawbey-road—Painting Exterior.

H. J. Cook & Sons	£826 0	Griggs & Son	£625 10
F. & G. Foster	689 0	H. Groves, Stockwell-street, Greenwich*	606 0
A. Coldman & Son	678 10		
F. Smith & Co.	661 0		
W. V. Goad	633 0		

Fulham—Fulham Palace-road—Painting Interior.

W. E. Blake, Ltd.	£741 16 4
A. Roberts & Co., Ltd.	681 0 0
A. & F. Polden	633 0 0
Lole & Co.	626 0 0
W. Brown & Sons (Builders), Ltd.	566 18 10
J. Garrett & Son, 83, Balham-hill*	534 0 0
G. W. Clarke	530 4 0

Fulham—Langford-road—Painting Exterior.

J. Garrett & Sons	£695 0 0	Lole & Co.	£629 0 0
A. Roberts & Co., Ltd.	641 0 0	W. E. Blake, Ltd.	554 2 2
A. & F. Polden	634 19 6	G. W. Clarke, 1, Uxbridge-road*	540 2 0

Hoxton—Napier-street—Painting Interior and Exterior.

H. & E. Lea	£1,392 10
A. Monk	1,350 10
Patman & Fotheringham, Ltd.	1,303 0
McCormick & Sons, Ltd.	1,235 10
C. P. Roberts & Co., Ltd., Tyssen-street, Dalston*	1,200 0
G. S. S. Williams & Sons	1,128 10

Islington, S.—Victoria-place—Painting Exterior and Interior.

F. Bull	£1,015 0
McCormick & Sons, Ltd.	1,006 0
G. S. S. Williams & Son	963 0
H. & E. Lea	898 6
Patman & Fotheringham, Ltd.	800 14
J. Waddington & Sons, Ltd.	786 0
Whitby Bros., 29-30A, Eagle-street*	779 0

Peckham—Woods-road—Painting Interior and Exterior.

W. Downs, Ltd.	£1,394	F. Smith & Co.	£931
W. V. Goad	1,043	H. Groves, Stockwell-street, Greenwich*	875
F. & G. Foster	1,009		
W. Akers & Co., Ltd.	974		
W. Young	965	W. Mills & Sons, Ltd.	879

Southwark, W.—West-square—Painting Interior and Exterior.

General Building Co., Ltd.	£1,336 0
W. Smith & Son	1,067 0
A. Monk	999 0
Lapthorne & Co., Ltd.	989 0
W. Downs, Ltd.	922 0
W. King & Son	919 0
Vigor & Co., 15, King-street, Poplar*	825 10

Wandsworth—County Secondary, Putney—Painting Interior and Exterior.

Rice & Son	£1,399 0 0	W. King & Son, 3, Vauxhall Bridge-road*	£877 0 0
W. E. Blake, Ltd.	1,306 6 2		
J. Garrett & Sons	926 0 0		
R. S. Donald	889 0 0		

Fulham—Sherbrooke-road—Painting Interior.

W. E. Blake, Ltd.	£845 0 0	G. W. Clarke	£599 0 0
Lole & Co.	768 0 0	J. Garrett & Son, 83, Balham-hill*	583 0 0
A. & F. Polden	738 16 0		

Westminster—The "Millbank"—Painting Interior.

W. S. Barton & Co.	£549	A. J. Staines & Co., Ltd., 154, Great Titchfield-street, Oxford-street*	£522
C. F. Kearley, Ltd.	543		
J. R. Sims	525		

LOXLEY.—For the erection of a cottage at Loxley, near Stratford-on-Avon, for Mr. T. Bennett. Messrs. Knight & Hebery, architects and surveyors, Stratford-on-Avon:—

Cox & Co.	£297 0 0
F. Thorpe	288 13 0
F. Chivers	271 12 6
Matthews & Mullis	243 0 0
Smith & Unert, Stratford-on-Avon‡	227 4 6

‡ Amended.

METROPOLITAN ASYLUMS BOARD.—Installation of new boilers at the North-Western Hospital, for the Metropolitan Asylums Board:—

Rus'on, Proctor, & Co., Ltd.	£7,000
D. Adamson & Co.	4,776
Holdsworth & Sons, Ltd.	4,160
Tinkers, Ltd.	3,985
W. Arnott & Co.	3,850
Yates & Thom, Ltd.	3,496
Galloways, Ltd.	3,384
H. & T. Danks (Netherton), Ltd.	3,360
Brightside Foundry and Engineering Co., Ltd.	3,287
J. Thompson	3,275
E. Danks & Co. (Oldbury), Ltd.	3,263
J. & F. May	3,225
J. Musgrave & Sons (1913), Ltd.	3,200
F. Danks, Ltd., Oldbury, Birmingham*	2,960

METROPOLITAN ASYLUMS BOARD.—For new boiler-house, chimney-shaft, etc., at the North Western Hospital of the Metropolitan Asylums Board:—

Britannia Construction Co.	£8,985 15 8
J. Smith & Sons, Ltd.	7,591 0 0
W. Heason	7,239 0 0
H. Peppiatt & Cooper	6,769 0 0
W. F. Blay, Ltd.	6,600 0 0
E. Lawrance & Sons, Ltd.	6,510 0 0
J. Elliman	6,361 0 0
R. M. Hughes	6,221 0 0
E. Wall, Alice Works, Summerstown, S.W.*	5,885 0 0

ONGAR.—For sewage disposal work at the Workhouse, for the Board of Guardians:—

J. Barlow, Ongar*	£194

OSWESTRY.—Erection of slaughter-house at Smithfield, for the Corporation:—

W. H. Thomas & Sons, Ltd.*	£125

POOLE.—Erection of cloak lobby, etc., at Heatherlands School, for the Corporation:—

H. L. Bromby*	£332

ROCHESTER.—Alterations to the Angel urinal, Strood, for the Corporation:—

G. Baker & Son*	£220

SEAHAM HARBOUR.—For erection of forty-five houses, with road and sewer works, for the Urban District Council. Mr. Walter R. Robinson, architect. Quantities by Mr. W. Morton, Sunderland:—

J. Huntley	£11,758	Clark & Son	£10,491
H. E. Pitt	11,638	T. Curry	9,930
E. R. Davison	11,116	H. Kirton, Seaham Harbour*	10,270
P. Duffy	10,781		
J. W. White	10,427	T. Pearson	10,236
W. B. Cooper	10,509	J. Douglass	9,967

SOUTHAMPTON.—Construction of storm-water sewer on Willedswood Estate, for the Corporation:—

J. Douglas*	£199

STRATFORD-ON-AVON.—For the erection of a villa residence in Maidenhead-road, for the Misses Lucar. Messrs. Knight & Hebery, architects and surveyors, Stratford-on-Avon:—

Price Bros.	£730 0 0	J. Cox & Co.*	£697 0 0
Smith & Unett	698 0 0	F. Chivers	97 17 6

[All of Stratford-on-Avon.]

THETFORD.—Supply and fixing of fittings for gas lighting at the Workhouse, for the Board of Guardians:—

Vaughan & Co., London*	£119

WINDSOR.—Painting of exterior of Workhouse, for the Board of Guardians:—

Gosling, Old Windsor*	£135

WORCESTER.—For covering in of cattle sale rings, for the Corporation:—

J. L. Larkworthy & Co.*	£287

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